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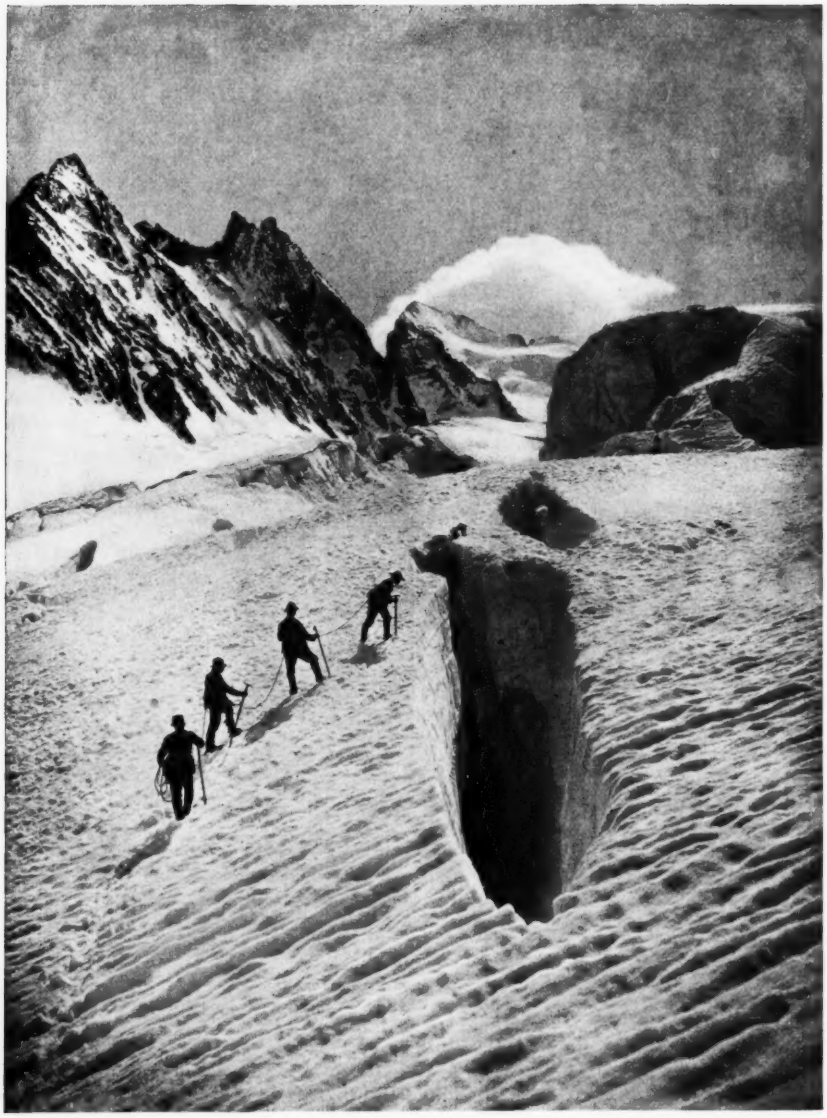


VITTORIO SELLA
CREVASSES OF GLACIER BLANC
GRAND SIGNE AND LES ECRINS — ALPS OF DAUPHINY

PHOTO-ERA

The American Journal of Photography

VOL. XVIII JANUARY, 1907 NO. 1

VITTORIO SELLA

CHARLES E. FAY,
President of the American Alpine Club

IT is no chance circumstance that the name of Vittorio Sella stands at the head of the legion of photographers who have made the mountain in all its phases the difficult subject of their labors. He comes by good right to this primacy — by grace, in part, of heredity; in larger part by virtue of intelligent, persistent work. His father, Venanzio, the founder of a leading industry of his home city, Biella — beautifully situated in a valley of Novara at the base of the Alps — was also a man of scientific mind, to whom the art of photography, then in its infancy, made a special appeal. As early as 1858 there appeared from his pen a notable article on the subject, which was translated into French and German and was later incorporated into the Encyclopedia of Roret. Vittorio's uncle was the noted Italian statesman, Quintino Sella, a man almost idolized by his compatriots, the type of a noble democracy, the patron saint of Alpinism, and at the time of his death president of the Italian Alpine Club. This noblest of sports was his chief recreation from his exhausting labors for the State. On these excursions his young nephews bore a part, Vittorio being but fifteen when he made with him his own first ascent, and thus began the long series of adventurous climbs which have familiarized him with the grandeur of the high summits in every zone. In his earlier ones the primitive camera of his father served him in his photographic work, giving place from year to year to more perfect instruments and ever-improving devices.

Born in 1859, he is now forty-seven years of age. Closing his school-life at eighteen, he entered the army for the usual term of service, from which he returned to take the headship of the great woolen industry, become vacant by the death of his father. Henceforth his art was to be pursued only in such vacations as he could snatch from business; but no man knew better than he what the French call *la science des moments perdus*. He seems to have had no wasted moments, but to have known how to fill all to the best advantage. Thus, in 1887, in a period of two weeks, he made seven high ascents in the Swiss Alps, including several of the most difficult peaks. The following year, in a similar forced march, he secured his superb array of views of the Alps of Dauphiny. In 1889 and 1890 he made two visits to the Caucasus, with equally notable results. By this time his photographic work formed a large and unparalleled collection.

In 1893 he exhibited in competition at the Geographical Congress at Turin an extensive series (some four hundred and fifty in number), to which was awarded the first gold medal and diploma of honor. It was these pictures which soon afterwards were brought to Boston for exhibition by the Appalachian Mountain Club, and which shortly were purchased and became the Club's well-known "Sella Collection."

In 1897, as a companion of the Duke of the Abruzzi, he visited Alaska, ascending with the party to the virgin summit of Mt. Saint Elias. As regards photographic results, this was the least satisfactory of his campaigns, the excessive dampness, in spite of every precaution, seriously injuring all his larger plates. It was doubtless this experience which led him to abandon his larger camera (12 x 15 inches), and depend upon the successful enlargement of smaller plates. Such are the superb pictures obtained in his next distant journey, which he made in 1900 with Messrs. Freshfield and Garwood of the English Alpine Club. The lofty Himalayas were the goal, and it was hoped that the party might reach at least one of those sublime summits. A phenomenally heavy snowfall thwarted this plan, but, in compensation, perfectly cleared the atmosphere and secured for Sella incomparable conditions for his work. The party made the circuit of Mt. Kunchinjinga — the first Europeans to accomplish this notable excursion. The series of views thus obtained is perhaps the most notable of all his work. The enlargements are marvels of detail and definition; the scenes, the grandest our globe has to offer. Incomparably grand is his panorama from the northwest of that great mountain, showing it and its retinue of mighty peaks and five vast glaciers descending the wild ravines. A passing cloud lightly hangs as a veil upon one of the peaks.

After this journey to India field-work had a rest for a few years, but the photographic laboratory at Biella was not idle, Sella's assistants being employed in supplying the demand for his pictures. The master himself was now engaged, in moments taken from business cares, in a new enterprise, on the island of Sardinia, no other than the reclaiming to culture of a large tract of land which had relapsed into wildness. It is a comment upon Sella's wide reading that the methods employed were those developed in the United States; and upon his appreciation of his parental duties, that his motive was "to secure a noble and useful employment" for his young sons. This interest has absorbed much of his time and effort for the past few years. But last summer he was again invited by his royal friend, the Duke of the Abruzzi, to accompany him on a far journey: this time to attack the still unconquered peaks of Mt. Ruwenzori in Equatorial Africa. Like all previous expeditions of that intrepid young explorer, this also was crowned with success, and doubtless an equally brilliant success was at the same time attained by Sella. Some of the results will soon be on view in this country, and an exhibition of unusual interest is likely to be made during the coming winter, affording an opportunity to enjoy an extensive series of lantern-views made in the Biella laboratory from the most striking of Sella's photographs among many mountain ranges from Saint Elias to Ruwenzori.

LOUIS J. CHRISTIE SURFACE OF GLACIER

THE HALLETT GLACIER ON THE MUMMY RANGE

LOUIS J. CHRISTIE

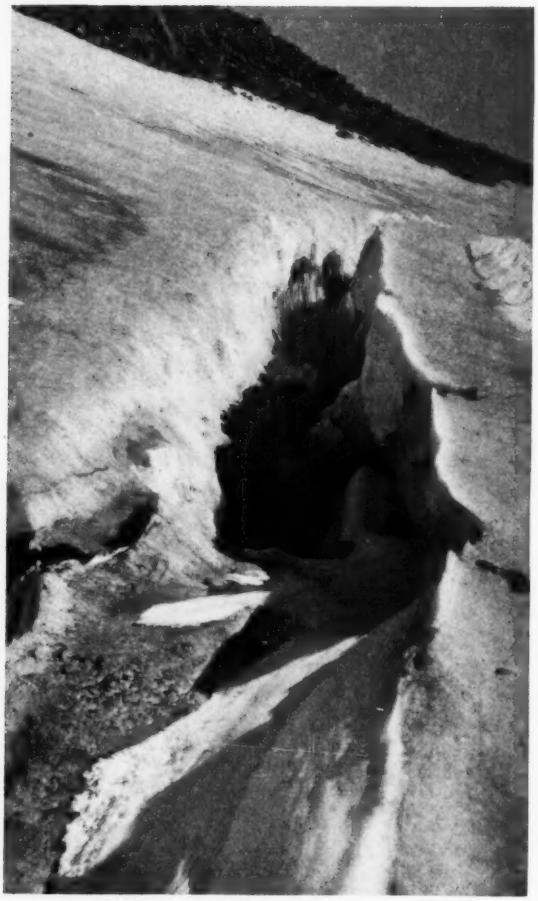
IN several of the articles written in the past year on the glaciers of the Rocky Mountains, it was noticeable that the discussion was, for the most part, scientific; and that the details and methods of approach were left out as too insignificant to occupy space where long names and unheard-of theories could be advanced.

That lack prompted me to try to show you the other side with my own trip to a glacier. Truthfully, I could not give a good definition of the one I saw, it was so totally different from anything else I had ever seen — so strange and wonderful that I am even at a loss for words that can justify it.

In Colorado there are two recognized glaciers; the Hallett Glacier, on the side of Hague's Peak, on the Mummy Range, and the Arapahoe Glacier, in the centre of the Arapahoe Peaks. It is of the former that I write.

About seventy-five miles north of Denver, in the heart of the Rockies in Estes Park, there is a beautiful little valley hemmed in by ranges of high mountains: Mt. Olympus and the Twin Sisters on one side, both rising above ten thousand feet; on another side a group with Long's Peak in the centre, 14,276 feet high; on another, the Front or Snowy Range of the Rockies; and, lastly, the Mummy Range.

It was from the middle of this valley that a party of three of us started, very early one bright September morning, with our horses packed with blankets and



LOUIS J. CHRISTIE LOWER END OF LARGE CREVASSE

with "grub" for several days. We followed the road from the ranch down across the Big Thompson River, past foothills that would have a grand name and the prefix "Mt." if they could only have been set up in the East, until we struck the trail leading up Black Cañon towards the Mummy Range.

Along two high ridges, probably moraines from ancient glaciers, sometimes on top of one, then on the other, our horses plodded along until noon, when we had reached an altitude of about ten thousand feet. We ate our lunch quietly by the side of the bubbling mountain-stream while it dashed over boulders and fallen timber on its way to the Atlantic some thousands of miles away, asserting

LOUIS J. CHRISTIE LARGE CREVASSE FROM OUTSIDE

its importance, it seemed, by the amount of noise it made. After an hour's rest we put the saddles and packs on again and started. We traced the stream up nearly to its source, either making our own trails or following those the mountain sheep and deer had made. Although we saw no wild animals, they had left their hoof-prints in the gravel only a short time before. Then, finally, about five o'clock, we came out into the open, with the peculiar top of Mummy Mountain standing out before us, golden in the sunlight, against a background of dark blue. Around the side of Mummy ran the trail which terminated at Lawn Lake, only a few feet below Timberline, our camping-place.

After unpacking the horses, we wandered around for a short time, studying the lay of the land and watching the clouds go drifting over the sun, just setting; then we set about to roast a few slices of bacon and toast the bread for our supper. Our camp was between two large boulders, the trees at Timberline on one side and snow on the other, with Mother Earth underneath and that beautiful "wide and starry sky" above.

It was cold throughout the night, and the fire we had, although it blazed with great vigor, helped along occasionally by large, dry trees, was inadequate. I distinctly remember getting up several times to feed more trees to it (the others did so, too, but they would n't admit it).

Along about four o'clock, before it was light enough to see about without stretching our eyes, Mills sang out to get up; we scrambled to our feet, blinked our eyes and, I am glad to say, omitted the "rush to a cool stream for a morning's plunge." A few more slices of bacon and a hot can of beans apiece served for our breakfast — and a mighty good one it was, too; in fact, I can't remember ever having any other breakfast that could quite come up to that one.

Then the sun came out on the top of old Mummy, and as the reflection gradually sank down lower it grew lighter, so at about five we started up the last stretch — to cross the range. The horses served for a short distance, but when the rocks grew larger and more irregular they were left behind and we took the rest on foot. Every once in a while we stopped, out of breath, rather like the dog whose breath came in short pants; then it seemed we were just as far from the top as we ever were; sometimes it looked farther. About half way up we saw some snow-white Ptarmigan flying around among the boulders, and we had the pleasure of chasing them — but we went on empty-handed; their lungs beat ours.

Towards noon the sun came down hotter and hotter, and our lips became parched; but when we came to the top, little inconveniences like that were dropped as we looked over at the wonderful view before us on the other side. About a mile away, and a few hundred feet below, lay the long, narrow body of the glacier. As I said before, words could n't justify it; we just stood there and looked. It seemed impossible. Then we started to descend. It was short work getting down to it, and when we saw it was ice, all ice, dirty and covered with chips of rock but still ice, a feeling of awe came over us. It took a brave heart to first step out upon it.

The others took the straight route across and climbed along on the cold, bare ice towards the top, not taking any chances of falling through where the snow had made soft bridges across the deep, dark chasms underneath. Shortly before, I had left them to take some pictures, but I caught up with them before they came to the top and there, together, we viewed the panorama on the other side.

The four separate ranges that lay to the north — the Medicine Bow, Laramie, Rabbit's Ear and Poudre — stood out across the wide valley of the Poudre in a remarkably fine perspective. It seemed to us almost as if we were

LOUIS J. CHRISTIE HALLETT GLACIER FROM THE SIDE OF MUMMY

looking at a painting, but the artist who could paint that picture would never need to paint another.

Roped together, we crawled over the ridge down to the lower part of the ice, and gradually worked our way down about a quarter of a mile to the first series of crevasses. These were only partly uncovered, and it was with great difficulty that we could get near enough to look down. The true dark green color of the ice was put forth quite differently from the pure white of that on top, in the glare of the sun, and the yawning chasm seemed fairly aching for some

LOUIS J. CHRISTIE MIDDLE SECTION OF GLACIER

LOUIS J. CHRISTIE INTERIOR OF CREVASSE
30 FEET BELOW SURFACE

one to fall in; but nobody wanted to at that particular time, so we moved on to the second series, the largest on the glacier.

In this series, there were three distinct gaps, the largest about a hundred and fifty feet long and forty wide (Goodness knows how deep!) and as cold as any cold-storage plant ever made. We made preparations to let one down; and although there were two strong men at the end of the rope, it seemed a hazardous task to let any human being brave the unknown dangers a place like that might contain.

Mills, being the true mountaineer of the three, was the first to descend, and

LOUIS J. CHRISTIE — UPPER END OF CREVASSE 40 FEET BELOW SURFACE

after having the rope tied securely about his waist he crawled over the edge, while we let out the rope inch by inch until he was standing on the thin ledge of ice, forty feet below the surface. It was necessary to keep a slight pull on the rope to prevent his breaking through, as the ledge was only the formation from the drippings above. After rummaging around for a short time, he gave the signal to pull. When he came to the edge, to show our joy that nothing had happened, we gave an extra yank, which sent poor Mills sliding for several yards along the surface, and it almost broke him in two.

With a rather scared feeling I went down in my turn, expecting at any mo-

ment to have the rope break or that the ice would give way and let me go hurling down into the deep chasm below; but I stopped in safety on the ledge at the bottom, full of wonder and admiration for the beautiful shapes and figures the sun and meltings had carved in the overhangings of snow-white ice. Everything had a fringe of icicles hanging to it, and they looked like sparkling silver in the sunlight above, as crystals on chandeliers in a brilliantly lighted ballroom. Every second or two an icicle would fall with a crash, and it was necessary to walk around carefully or be hit.

At the end of the crevasse, a huge pile of snow rose out over the top and in the glare of the sun made as beautiful a picture of light and shade as Nature could paint. It was a great regret to me that it did not show more clearly in the photograph I took of it.

My curiosity was only about half satisfied when that peculiar shivery feeling you get when the thermometer registers twenty or thirty below took hold of me, and, dressed as I was in light, loose clothes for climbing, it made me feel quite numb. My boots were saturated from standing on the wet snow and ice; moreover, the small pools formed by the drippings helped, too — so much so, in fact, that it was all I could do to drag my feet after me to the place where the rope came over. However, after I was once on the surface it took only a short time for the hot sun to warm me up again.

We inspected the rest of the crevasses along down towards the end of the glacier, but found none as beautiful or as interesting as this one.

Our calculations in the several hours we spent walking around on the ice were that the whole body was about a mile and a quarter long, nearly a half mile wide; and from the width and from general slope of the side of the mountain, it could easily have been three or four hundred feet deep. For these calculations I have no proof, as they were determined from appearances only.

At the bottom, where the outlet was, the stream pouring out from the rocks and ice was of no mean size. The cakes that had broken off were lying about at random on the steep slope, surrounded by large banks of snow. In the small pool at the head of the stream, the boulders lying there were loose and on a delicate balance. So uncertain were we of our safety in descending there that we turned around and climbed back, preparing to make our departure by the same road we had come. All along the lower end there was a smooth patch of ice, probably smoothed out by the melting rays of the sun, and it struck me that it would be a rather novel thing to come back and enjoy a skate in the summertime. I am afraid, however, that by the time I could get over the ridge, skates, and probably clothes too, would be discarded.

To grind our way back over the side of Hagues seemed to us, in our condition, to be harder than the trip up on the other side, although that was several times as long; but with all our wet feet, tired eyes and general tired condition, we managed to crawl along until about three, when we reached the top and started down on the other side. A few minutes later we were on our horses, headed for camp.

VITTORIO SELLA

GABELHORN, ALPHUBEL, RIMPFISCHHORN, ETC. — SWISS ALPS

Probably you know that at an altitude of eleven thousand feet the air is rare and refreshing — so much so, in fact, that after cooking hurriedly a few slices of bacon, we were ready to start on the trip back to the ranch. We were packed and ready by four; but instead of going back through Black Cañon, we chose the roundabout way through Horseshoe Park. The roads were wide after we crossed the moraine and afforded better riding in the dark.

With nothing but the howling of the coyotes to interest us, we arrived at the ranch late at night, where a nice hot supper was waiting for us — and I can assure you it was appreciated.

A FACTORIAL DEVELOPMENT CHART

RICHARD PERCY HINES, B.E.

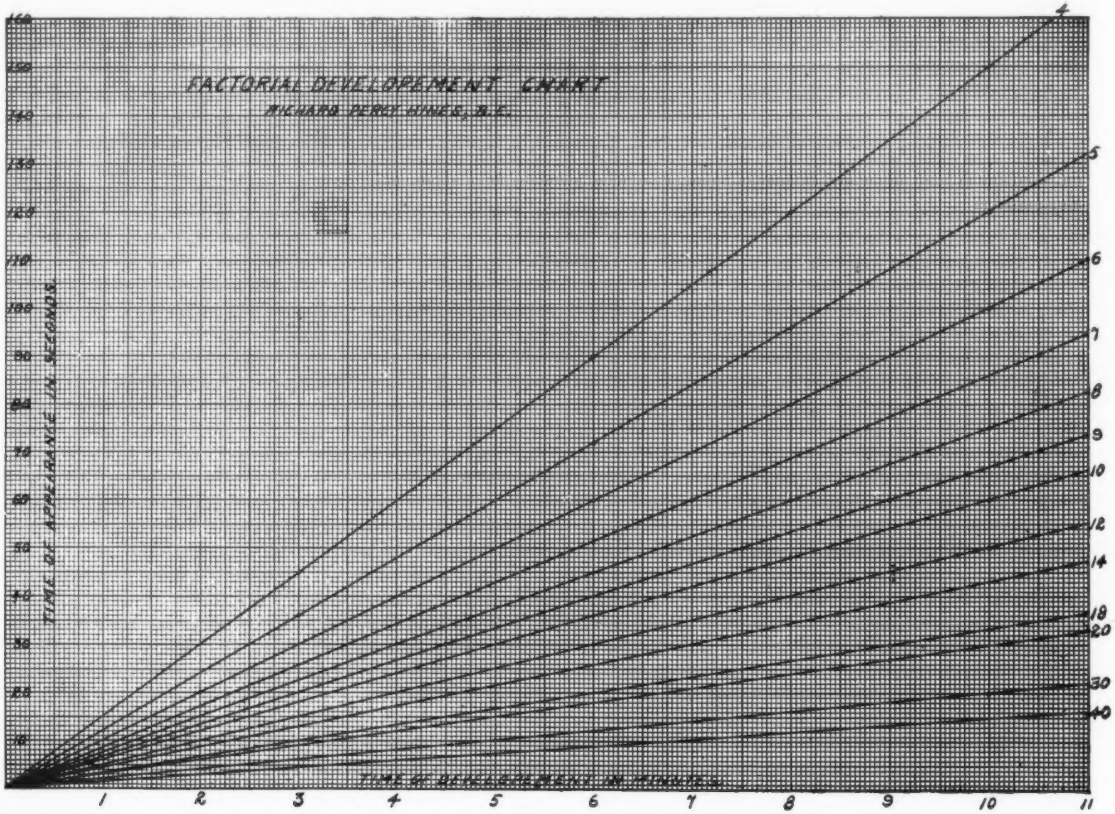
FACTORIAL or tank development for photographic plates and films has come largely into use of late, and for those who use this method regularly in their developing, or are just beginning experiments along this line, the Factorial Development Chart accompanying this article will be found most useful.

As is known, the time required for the proper development of a plate, assuming that the exposure has been within the limits of the latitude of the plate, depends upon the developing-agent used, the composition of the developer and its temperature. These factors will influence the time of appearance of the image, and for each developer there is a factor by which the time of appearance may be multiplied to give the time required for the proper development of the plate. This factor may be determined by each worker for the developer he is using, or taken from the Table of Factors on page 86 of the PHOTO-ERA for August, 1906.

The formula expressing the relation between the time of appearance, development factor and required time of development is Ta x F/60 equals Td where Ta equals time of appearance in seconds, F equals development factor, Td equals required time of development in minutes.

This formula has been used in preparing the chart in a manner frequently used in engineering-work, to show graphically the results from certain formulæ and experimental research, and those of the PHOTO-ERA readers adept in handling the slide-rule will find the formula easily solved this way, it being only necessary to set the ratio F/60 on the rule, and, for any time of appearance, read off directly from the rule the proper time of development.

The method of using the chart will be easily understood, and is as follows: given a developer whose factor is known, taking, for example, pyro, with two grains to the ounce and no bromide — having a factor of 12; and suppose, further, that the image appears thirty seconds after the plate or film has been flowed with the developer, then it is required to find from the chart the proper time of development.


FACTORIAL DEVELOPMENT CHART
RICHARD PERCY HINES, B.E.
TIME OF ACHIEVEMENT IN SECONDS
TIME OF ACHIEVEMENT IN MINUTES
1
2
3
4
5
6
7
8
9
10
11
4
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6
7
8
9
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12
14
18
20
30
40

VITTORIO SELLA A CANE-BRIDGE IN THE HIMALAYAS

On the left-hand vertical margin find thirty seconds and follow this over horizontally to the right until it intersects with the "development factor diagonal" marked 12, and, dropping down from this intersection to the bottom horizontal line marked "Time of Development," we find six minutes as the required time of development for the thirty seconds' time of appearance and development factor of twelve.

With this method it is not necessary to know the temperature of the developer, as in the method by Mr. Alves, published in the PHOTO-ERA of September, 1906; but of course, in the factorial as well as in the regular method of development the best results are obtained with the temperature of the developer between 65 and 75 degrees F.

Should a case arise which does not come within the chart, the result may readily be obtained by multiplying the time of development found for some assumed time of appearance within the range of the chart by the ratio of the actual time of appearance to the one assumed on the chart. For example: take sixty seconds as the time of appearance with the above factor of twelve. This falls without the chart, so we assume a time of appearance of thirty seconds, find the time of development for this and then multiply by the ratio of 60 to 30, giving us twelve minutes as the proper time of development.

VITTORIO SELLA
MATTERHORN — SWISS ALPS

THE PHOTOGRAPHY OF SNOW LANDSCAPES

W. RAWLINGS

FOR the purposes of this article, photographers may be divided into two classes,— those that have opportunities of photographing landscapes during the winter months, and those that have not. It is the fault of the former class if they do not make good use of their opportunity, and it is the misfortune of the latter, in that they cannot avail themselves of some of the most beautiful natural effects which the changing seasons present to us. Our English landscape is often much more beautiful, photographically considered at least, during the cold gray and misty months of winter than at the times when sunshine and brilliant color prevail; many of the effects are more easily secured by the camera; and the pitfalls into which the photographer without great experience is likely to fall are perhaps fewer in number. For example, he is not so easily misled by the charms of color. How often do we hear the beginner, sometimes even the expert, say, "I was carried away by the color of the scene." In winter sober tints predominate. Errors in tone values and color rendering are therefore far fewer in the photographing of winter landscapes if certain precautions in exposing and developing the plate (which will be dealt with later) are taken.

There are many fine subjects which are quite impossible during the summer, owing to the density of the foliage and undergrowth. When the leaves have fallen, all the beauty of the tree-forms stand revealed, and many a new vista is opened up. The photographer who has the opportunity of landscape work in the winter, and does not avail himself of his privileges, loses some of the best chances of picture-making which the round of the year offers.

Snow Landscape.— Only one aspect of winter landscape will be fully dealt with in this article. Perhaps it is the most difficult of all for the photographer to render with anything like complete success. I refer to landscape covered with snow. Sometimes a winter passes without a single snowfall. Possibly when snow does come, fears of cold hands, wet and cold feet, and many other discomforts keep the photographer by his fireside. But good stout boots, well oiled, and a brisk walk to the field of action usually remove any chance of evil results from the climatic conditions. The writer has on many occasions spent whole days tramping with his camera in deep snow and in wet snow, on the high moors and in the secluded valleys of Yorkshire and Devonshire, without ever taking cold or harm from the exposure — nay, rather, increased health and vigor have invariably followed.

The Camera.— Let us now look at some of the technical and practical difficulties, and see how they may best be overcome. One of the first questions that presents itself is, What kind of camera is best fitted for the work? Is a stand camera essential, or is a hand-camera a serviceable instrument for securing snow-pictures? If more than one or two days' excursion is being made it will be found advisable to take both stand and hand cameras; for in, say, a

week's holiday very varied subjects and very opposite conditions of weather and light may be met with. The stand camera will, of course, be equal to any subject which does not include moving figures or animals, and will probably be found the more useful instrument.

The Lens.— But if the hand camera possesses a lens working at a wide aperture, say *f*/6, by all means make it part of the equipment. The wide aperture is almost essential for winter work. Hand cameras with lenses working at *f*/11 and *f*/16 will be of use only in very favorable light and with comparatively few subjects. Nothing is more tantalizing than to meet with delightful subjects upon which we are burning to expose plates, and to know that the instrument we are carrying is quite incapable of giving the necessary exposure. In such a case we shall probably expose the plates, against the dictates of our better judgment. We shall thus give ourselves the trouble of development on the return home, the final result being disappointment at the failure and waste.

For the stand camera, let the equipment be as complete as possible. Lenses of varying focal lengths are of the greatest service. For a half-plate camera, lenses of six, eight and ten inches' focal length will be found most useful. For a quarter-plate, lenses of four, five and one half and eight inches are excellent. It is very desirable to have a waterproof focusing-cloth. It has the advantage of being very opaque, and of affording needful protection of the camera against rain, damp and snow. There is nothing more wearisome than frequently packing and unpacking the camera because of rain or damp. The waterproof cloth dispenses with this unpleasant necessity.

Plates.— The question of plates or films is usually a foregone conclusion according to the nature of the camera in the possession of the photographer. The writer's preference is emphatically for plates, notwithstanding their weight and bulk. It is best to take away with us as many plates or films as we are likely to want. Ask the dealer to get them fresh from the maker, and of the same batch. Plates bearing the same name and label, nominally of the same speed, often vary a good deal in their rapidity. The Extra Rapid Series, of whatever brand chosen, should be used so as to enable the photographer at any time of the day to cope with subjects badly lighted or having heavy shadows. A rapid plate gives a power in reserve which may be called upon when wanted. With a lens working at *f*/6, and an extra rapid plate, hand-camera work is possible as late as 4 P.M. in January, provided discretion is used as to the subject exposed upon.

Color.— A landscape in winter, especially when snow-clad, is very largely in monochrome. The brilliant and varied colors it may have in summer are toned down to sober tints, and if covered with a more or less heavy coating of snow is reduced to shades of black and white. Isochromatic plates, therefore, possessing qualities of rendering color values correctly, are of no special value in snow photography. Ordinary plates are just as good for the purpose, and do not require the special precautions in the dark-room manipulations which isochromatic plates demand. It is sometimes claimed that isochromatic plates

get rid, as far as the picture is concerned, of the mists that often dim the distance in a landscape. This is a very doubtful claim, and even if true is pictorially undesirable. The charm and delicacy of many a winter picture is due to the prevailing mists.

Halation.— Backed plates are certainly advantageous. Great contrasts have often to be dealt with in snow photography, especially when the fall is a light one. Black tree-trunks against white snow, dark buildings, and glistening sunlit surfaces are subjects very likely to give halation on unbacked plates. By all means, therefore, use plates as well backed as it is possible to procure.

The Negative.— It is most important to gain a clear idea of the kind of negative best fitted to give a satisfactory print, true in tone and texture in all its parts, before setting out to expose a plate. When there is a deep fall of snow which largely or wholly obliterates the ordinary features of the landscape, the gradations and textures are extremely delicate. The contrasts of light and shade in the snow itself, even in sunshine, are not great. It is evident that under such circumstances the negative must be developed thin. "Dense" and "thin" are relative terms, but perhaps the reader knows the usual density of a good cloud negative. A negative of a snow picture should have a density only about twice that of a cloud negative. If the deposit is much more than this the finer detail will be inevitably lost in any printing-process except carbon. The exposure has to be calculated to a nicety, or the variations in the light and shade of the subject will vanish.

Exposure.— There is a great difference in the exposure required for a landscape hidden in deep snow, and one only lightly covered with snow having dark objects protruding, such as tree-trunks, bushes, rocks, walls or houses. It is, of course, difficult to give exact directions, but as a rough guide it may suffice to say that deep snow in sunshine without dark objects, between ten and two, would require about one-twentieth second at *f*/11. In a diffused light a similar subject should receive one-fifth second, whilst one with dark protruding objects would require four to twenty times these exposures. The two main points in the exposure are these: first, do not over-expose on brilliantly lit deep snow, or all the fine detail and light and shade of the subject will be lost in the print, through flatness and want of contrast in the negative; second, do not under-expose when dark objects are included in the picture, or the negative will show such differences in the density of the deposit that nothing but a "soot-and-whitewash" print can result.

Development.— But even if the correct exposure is given, it is very easy to miss the required quality in the negative by wrong development. What are the best means of securing a thin, delicate negative full of fine gradations? First, avoid using hydroquinone (unmixed with other developing-agents), for hydroquinone tends to give dense deposits when the developer is at or about the normal temperature. (If very cold, hydroquinone developer becomes very slow in action; indeed, almost inoperative.) Almost any other developer is suitable for the purpose, preference being given by the author to pyro-soda, which can

VITTORIO SELLA

GENERAL VIEW OF MÄRJELEN LAKE — SWISS OBERLAND

be made to yield almost any character of negative that may be required, both as regards density and color. A simple and excellent formula is as follows:

A

Pyro	1	ounce
Metabisulphite of potassium	½	"
Water	80	ounces

B

Bromide potassium	60	grains
Sodium sulphite	8	ounces
Sodium carbonate	8	"
Water	80	"

For deep snow pictures use equal quantities of each without further dilution. For snow subjects with considerable contrasts dilute with an equal volume of water. Development will also be facilitated by warming the developer, raising its temperature to about 60° F. Nearly all photographic processes are considerably retarded when the solutions are cold. If this is done, it is also well to warm the hypo-fixing-bath. On no account use a quite freshly made fixing-bath unless slightly warmed, otherwise there would be considerable danger of the plates frilling at their edges. Neither plates nor printing-papers should ever be transferred from one solution to another when the solutions differ considerably from each other in temperature.

Printing-Processes.— There are three printing-processes which seem peculiarly adapted to the satisfactory rendering of snow landscapes. They are platinotype, bromide and carbon, and each one of them has special qualities which may be briefly considered. First, they all have the common quality of a color which is suitable. A black-and-white print, with all its shades of gray more or less delicate, seems in the nature of the case more appropriate than a print of a warmer color.

Platinotype.— Platinotype paper for direct printing is not surpassed for its range of tone and beauty of texture. The type of negative already described as the one to aim at prints well in platinum. The process is easy, the only difficulty being one which a short experience soon surmounts; viz., the point to which the printing should be carried.

Bromide.— Bromide paper, when correctly exposed and developed, and when negatives suited to the process are used, gives results almost if not quite equal to platinotype. It is true that one sees a large number of bromide prints far from equal to the best results on platinotype paper, but this is not the fault of the paper, and on the whole it is the writer's favorite printing-medium. It can be printed by artificial light, requiring but a short exposure, and any error made in the first print from any given negative may be at once discovered and remedied in the next exposure within a few minutes. Prints may be direct (the same size of the negative) or may be enlarged. This is an immense advantage in winter photography, for, however much inclined the photographer may be in the summer months to carry large cameras about, he will most likely prefer

the smaller size and weight of a quarter-plate camera during severe frost and snow. The risk of awkward slips and falls, with their attendant danger to limbs and apparatus, is much less. The writer has on more than one occasion, when carrying a whole-plate camera, suddenly found his heels slipping away from under him, and in a moment the camera and the man have formed a mixed heap on the ground. Enlargements of fine quality and gradation may be obtained from any good negative which is not too dense — an advantage which neither platinotype nor carbon can claim. Prints direct and enlarged may be made at night after one's ordinary day's work is done — a convenience much appreciated by the man who has little or no opportunity for daylight printing, especially when there is so little daylight available.

Carbon.— Carbon printing is the third process recommended, and is very valuable when the negative to be used is somewhat too dense in its deposit for either of the other processes just named. It is always well for the photographer to master more than one printing-method. He can then select the one likely to give the best result from the particular negative or batch of negatives in hand. If the subject is bold with somewhat striking effects of light and shade the carbon print is likely to be most effective. From what has been said it may be inferred that the printing-processes and papers which give warm tones and glossy surfaces, such as the ordinary and self-toning P.O.P.'s, are not considered suitable for rendering snow. Warm tones are out of place for rendering such cold subjects.

Some Pictorial Considerations. — And now let us turn from technical considerations to some thoughts on the selection of the subject itself. The principles of composition are, of course, just as applicable to snow pictures as to any other landscape. Every photographer should endeavor so to appreciate and to assimilate these laws that they should form part of his nature. He should instinctively, and without conscious thought, select just that point of view which places the component parts of his picture in the best relations one with another. There should be a principal subject to which all else is subservient. All parts should help to emphasize it. The lines of the picture should lead up to it; and the masses of the light and shade should, in their proportions and the spaces they occupy, help to make clear to the onlooker that it is for *this* the picture was made. This instinct can come only by degrees, and cannot be acquired by a few weeks' study of art text-books, though these are very helpful — and are, in fact, necessary. It comes by continuous observation of, and continued thought about, pictures by the greatest artists living and dead, and by perpetual association with beautiful things. When once gained, the problem of the selection of the subject solves itself. But laws of composition cannot be gone into further here, only certain applications of them to the special subject in hand.

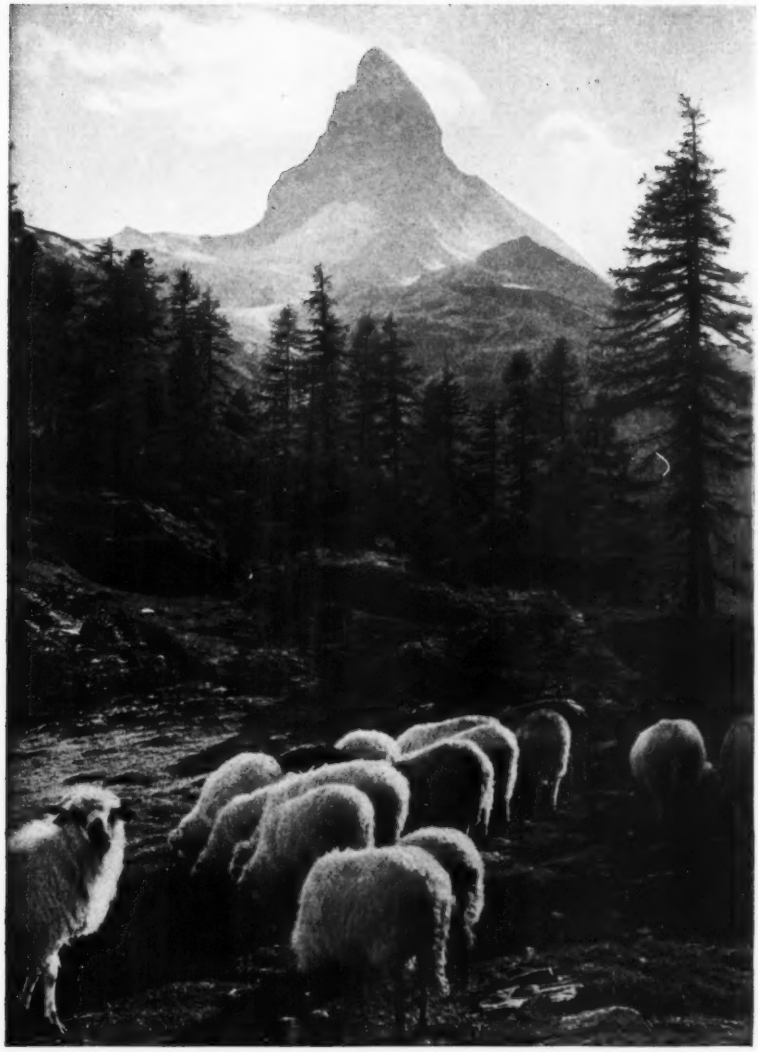
"*Breadth.*"— One of the main pictorial considerations in landscape work, whether in summer or winter, is what is known as "breadth." This may be described as that quality in a picture, due to the arrangement of its component parts, by which *spottiness* is avoided. Spottiness comes from breaking up of

the masses with minor points of light or dark of little interest, where points of light or dark are not wanted. Now this want of breadth is a particularly likely pitfall to drop into in snow photography. Unless the fall of snow is heavy, it is extremely difficult *not* to fall into it, for the landscape is almost invariably in such a case a white surface broken up in every direction by innumerable little patches of dark, consisting of unevennesses of the ground, tufts of grass, weeds and herbage of one kind or another. Unless a broad mass of shade or of dark tone can be included in the picture, the subject had better be left alone. With deep snow there is a difficulty of another kind. There is a great tendency to get large masses of white, formless and detailless, with no shadow or darker tone. In dull, gloomy weather, this is particularly likely to happen. But a surface of plain white paper does not truly suggest snow.

Sunshine.— Whenever possible, snow should be photographed in sunshine. It is surprising the change a gleam of sunshine effects. What appeared a dull, uninteresting white surface before now shows a marvelous texture, fine detail and exquisite form, and also broad masses of light and transparent delicate shadow. If the sunshine is fleeting, photography becomes quite exciting, for subjects of exquisite beauty come and go rapidly. Before the subject is properly arranged on the screen and focused, the sunshine may vanish, and with it all the pictorial interest of the scene. Here the great use of the hand camera comes in, for the exposures required are short, and well within the possibilities of this instrument.

Textures of Snow.— The texture of the snow has just been spoken of. It is interesting to study and secure photographs of snow in varying conditions of weather. Dry snow, wet snow, wind-swept snow, and what has been called "toe-achey slush" all display very various textures and surfaces, and the successful rendering of these all help to give a definite feeling and sentiment to the picture. It is absolutely essential to keep the negative thin during development, or all these finer qualities will be lost. A dry, crisp snow usually demands a bright, clear atmospheric effect in the picture; light clouds with sunshine are appropriate. Wet snow and slush should have duller treatment with misty atmosphere and heavier, softly defined clouds. Wind-swept snow allows of a bolder treatment of the sky with large rolling clouds, suggesting storm and force and movement. There should be complete sympathy between the landscape and sky and cloud, not only in the direction of the lighting, but also in the sentiment suggested by each. All these points require thoughtful attention.

Tree-trunks.— In and near London there is a difficulty where trees form an important feature in the landscape, which does not exist in the country. This is the blackness of the tree-trunks, due to the deposit of smoke. Under normal conditions tree-trunks have more richness and variety of color in winter than in summer, for they are then covered with lichens and mosses, which often give them great brilliance. In London, however, we see little of this brilliance, and the blackness of the trunks is in marked contrast to the whiteness of the snow. Unless care is taken our pictures will indeed be "soot and whitewash." The



MOUNTAIN SHEEP AND MATTERHORN

remedy is a simple one — so far as a remedy is possible — a *fuller exposure*, so as to secure all the detail there is in the dark-colored tree-trunks, and of course thin development.

The Lines of the Picture.— Many a landscape is chosen as a subject for a picture because of its pleasing lines, e.g., a lane winding in graceful curves towards a distant tree or cottage, or a path through a meadow to a gate or farmhouse. These lines are often completely obliterated by a fall of snow, and that which before formed a good subject for the camera may now under the new conditions be thought to be useless. But with snow we must remember that we have the power of making our own lines, and of placing them just where we want them — a power that is of the greatest possible service to the pictorial photographer. How often do we wish we could slightly alter the curve and direction of a path or track to suit the composition of the rest of a picture, and envy the painter and draughtsman his ability to do this at his will! With snow-pictures, and in a less degree with slush pictures, we have this possibility. We should decide with careful thought just where we wish our lines, and to which object they should lead, and then a few minutes devoted to tramping down the snow will work wonders.

Figures and Animals.— The introduction of suitable figures or animals into snow landscapes is a very great aid to pictorial composition, and also to the sentiment and feeling of a picture. The general impression which an expanse of snow-covered landscape leaves upon the mind is that of dreariness and loneliness, notwithstanding its beauty and purity. By the introduction of sheep or cattle a pathetic and poetic touch is added, which raises the picture of such a landscape to an altogether higher level. Life, whether of man or beast, when introduced into a picture, usually becomes the absorbing interest. It will therefore be necessary, generally, to place the figure or animal at or near the strongest position in the picture, and, if possible, let the lines lead in that direction. It is, of course, often impossible to *place* figures or animals, particularly the latter, just where we want them, but by altering our own position in relation to theirs much can be effected. A quick appreciation of just the right moment to expose the plate when composition and grouping are at their best should be cultivated, and when the photographer is satisfied that the subject is really a good one, it is well to expose three, four or six plates on the same group. Follow sheep and cattle slowly and quietly in their movements from one part of the field to another, keeping a continual and critical watch upon their grouping. As this improves have the camera ready for an exposure, so as to be able to seize the psychological moment. Failures there are sure to be, but one real success is worth many plates.

Mounting and Framing.— Two or three words on the effective mounting and framing of the print must be added before bringing this article to a close. Generally speaking, shades of gray, not very dark, will be found the best for the mount. When two tints are chosen, one to be laid upon the other, the question arises which should be placed next the picture. The picture itself must be

WILFRED A. FRENCH MONT PILATUS

consulted. If it is desirable to accentuate the lights in the picture, to make the whites appear more white, and by contrast to render the differences of light and shade more apparent, then place the darker tint next the print. If, on the other hand, the contrasts are already too great, the snow looking too white and featureless and the blacks too black, place the light gray next the picture. Experiment alone can decide the best proportions of each tint. A quarter to three-eighths of an inch will usually be sufficient for the inner tint for prints up to whole-plate size. More than two tints should be used with great care and caution, the danger being the destruction of the simplicity of the whole, and the attention of the onlooker being drawn to the mount rather than to the picture. The whole purpose of the mount is the effective and enhanced display of the picture, not the ingenuity of the mounter. The print may be framed "close up," or with such a mount as has been described. Unless the subject and the effect is a bold one the latter is recommended. A delicate picture without large, bold masses is apt to be over-weighted by close-up framing. A moulding, simple in design and of a black or dark greenish-gray color, is most suitable.

Be Prepared.— Finally, let all who have chances of winter, and especially snow, photography keep their cameras at hand, in good order, and ready for work. Do not think of putting them away in out-of-the-way places, waiting for the return of summer suns and neglecting all the marvelous beauties of the winter suns, mists, frosts and snows.—*The Practical Photographer, No. 10.*

DEVELOPMENT WITHOUT ROCKING

RUDOLF WALTER

Dr. Neuhauss, the Technical Editor of the "Photographische Rundschau," in which the above article appears, says: "With his manuscript the author sent me a large number of negatives, some of which were developed by the old hand method, and some by the new. Most of them were very difficult subjects; for instance, taken against a bright window. The results by the author's new method are absolutely astounding; exposures which by the old hand development were quite useless gave with the new method negatives of exquisite fineness. We can only strongly recommend our readers to try this method."

EVERYBODY knows how wearisome the development of plates by hand is, especially when a number have to be developed and slow developers are used. Stand development in grooved troughs is some help, but both methods have their disadvantages.

At the suggestion of a well-known worker, who did not follow the matter any further, I have arrived at the following method of development, which has proved perfectly satisfactory and gives very beautiful negatives even with some over-exposure, and it has also the advantage of cheapness. To understand this method some preliminary remarks are requisite.

When a plate is exposed, where the light falls there is formed silver sub-bromide; after exposure we have then silver bromide and sub-bromide in the film. During development the sub-bromide is reduced to metallic silver and bromine is set free. The latter combines with the alkali in the developer to form alkaline bromide. In hand-development the bromide formed is equally distributed throughout the developer. The presence of bromide in the developer checks the reduction of the silver sub-bromide to metallic silver. For this reason bromide is added to the developer in the cases of over-exposure. This restraining action is exercised in the shadows as well as the high lights, for the bromide is by the rocking of the dish evenly distributed throughout the whole of the developer. In hand development, therefore, the retardation of the silver reduction is equally distributed over the whole of the plate, and a partial action on the reduction of the silver in places where it is desirable is unattainable. Stand development shows the same fault, for the bromide formed slowly sinks in consequence of its specific gravity to the bottom.

There is therefore nothing left but to place the plate film up in an absolutely levelled dish, and after pouring on a weak developer, to leave it undisturbed. With this method of development the bromine set free in the most exposed parts of the plate sinks down as sodium or potassium bromide and remains there, as the plate is not rocked till development is finished, and thus acts as a special restrainer at these places, especially as the bromine "*in statu nascendi*" appears to act more energetically than when it is added drop by drop as bromide to the developer.

VITTORIO SELLA

KARAUGOM GLACIER, FROM RIGHT-HAND MORAINE — CAUCASUS RANGE

The restraint of the development is regulated by this process in the most correct way, for in the shadows, where little bromine is set free, there is no, or very little, restraining action. In the high lights, on the other hand, there is strong restraining action. The result is, that not only is the negative more even than when hand-development is used, but also over-exposure or halation are almost completely compensated for. For landscapes with deep shadows and bright high lights, this method of development is especially to be recommended.

The most practical solution for this method of development I have found in Von Hübl's glycin stand developer diluted 1: 40.

The method of working is as follows: a box with a light-tight cover should be obtained and the inside painted black. In this should be placed the developing-dish, and in this the well-dusted plate, which is quickly covered with the well-diluted developer. Any air-bubbles are then removed and the box closed. The cover must cover all sides and not stick, so that there thall be no shaking of the plate. The box with the plate must be absolutely level. The dark-room may now be left, and after about half an hour the cover may be very carefully lifted and the plate examined without touching it, so as not to disturb the developer. It is extremely easy, especially if a porcelain dish be used, to judge from time to time as to the progress of the development. If some plates are developed they should be lifted out as carefully as possible, so as not to disturb the developer over the others. The finished plates can be fixed as usual and the cover replaced, and the others left till finished. Development in no case lasts longer than 1½ to 2 hours.

If the dish is not absolutely level the bromide formed moves slowly in a wave to the side, and not only is the effect lost, but the bromide acts in the wrong places and wavy lines are caused, corresponding to the movement of the salts.

I hope that the above notes will lead to further experiments, and shall be glad to think that others will obtain equally happy results.— *British Journal of Photography.*

W. TOLMAN CASCADE RANGE, WASHINGTON

ORIGINALITY

JAMES C. SAVERY

Novelty in art is not an absolute difference from what has gone before, for that is sure to be bad, but only that difference and that improvement which one instructed generation can give to the past excellence it builds on.—*James Ward.*

BE original, even if in so doing you sacrifice conventional beauty! This is the plea I make to the photographer who has followed in the rut of conventionalism, thinking it would be a transgression of some mysterious law to do otherwise. The majority of us started upon our photographic careers by following the advice of "the other man" and continuing with those ideas to the end. What I mean by the "end" is that time when we have mastered the rudiments and have branched out to show what we have gleaned from our reading and experience; but most important of all, what *we* know ourselves. Few go farther than to demonstrate that they can perform to their own satisfaction what some one else has done before them. True, they have become proficient in the stereotyped processes of photography; but are they in any way raising the standard of photographic art, or doing anything different from their predecessors?

It is therefore to the picture-maker who has the true principles of photography at heart, who perhaps has never stopped to think why such and such a thing is done, that I speak; but not to the man who boasts of putting out a certain large number of platinum prints an hour, irrespective of whether they are good, bad or indifferent.

To start, I cannot illustrate this point of originality more clearly than by referring to that little band of workers who, by their persistent efforts, have done so much towards raising the standard of photographic art in America — the Photo-Secession. One has but to step into the simple but highly artistic "Little Galleries" of 291 Fifth Avenue to appreciate what wonderful achievements are being made along the lines of artistic photography. One sees upon these walls groups of pictures that represent the efforts of Steichen, Stieglitz, Käsebier, and I might mention many more who deserve equally as much credit — every group widely different from the other, but all possessing that indescribable charm which we instinctively feel is the individuality of the artist portrayed in light and shade. When we become familiar with the work of a true artist we are able to discriminate his work from all others, for picture-making to him is an expression of an individual temperament; and, like the sound of his voice or the touch of his hand, it belongs to him, and to him only.

Wherein does the charm of such pictures lie? Is it because we know they represent perfect examples of development and printing? To a certain extent we could answer "Yes" to these questions. They do stand as examples of perfect workmanship from a mechanical point of view; but, most important of all, they represent the *originality* of the individual who has executed them.

It was in a short talk with Steichen, one of the truest exponents of the Secession, and who has proven that photography is one of the greatest mediums

for individual expression, that the author was, in a way, able to glean the secret of this man's success. The conversation had drifted to a point of inquiry as to the best book written upon a certain complex photographic process.

"It is very well," he replied, "to read all the books you can; but after doing so, put the books aside, and then work out your own salvation."

This, then, is the point that every photographer, whether he be a professional or amateur, should bear in mind. Learn to rely upon your own intelligence; get all the knowledge you can from "the other man," and then consult the best book on the market — "yourself." If your artistic taste tells you to do a certain thing, do it, and do not shrink back because you have never before seen or heard of such a thing. That is all the more reason that *you* should do it. For instance, if books on portraiture tell you to throw the light from the side, do so until you become perfect in this particular process, but don't keep on indefinitely because you think you have to. Throw the light from below once: note the result; and if you like it, do it again. It may not be quite so artistic, but it will represent originality, and there will be one consolation in knowing that your work differs from that of the majority of photographers.

There is one point to bear in mind. Do not let your work border upon the "freakish." This is originality carried to its worst form; and instead of bettering conditions, you only bring about a result that is quite the opposite. Many people mistake "freaks" for art, because such prints differ from the ordinary. If a print truly satisfies your artistic sense, leave it alone — at any rate, until you have learned better; but for the sake of humanity and the high principles of art, do not perpetrate a photographic monstrosity merely because you think the effect is "funny."

Being original does not necessarily mean that one must discover some new process — far from it. Some of the most charming work has come from those who merely took the old principles that we all know, juggled them a little perhaps, but in the end gave us a result that was artistic, at the same time original, and, furthermore, not the least way "freakish."

In the whole process of photography there is nothing so small that we cannot change to better suit our individual tastes, if we think the occasion so demands.

In conclusion, the only warning I can give is not to be *too* original until you have first mastered the fundamental ideas, for we must first know what "the other man" does not know before we dare attempt to teach him anything. But when the time does come, when we feel that we have the principles of photography well in hand, let us step out from the shackles of custom, stand independent if we think a certain thing is right, and for the first time, I think, we will then appreciate the fact that what most people call genius is nothing more than the result of using the brains that the Almighty gave us. In all events, photography will have added to its charm a hundred-fold; and may the time quickly come when our photographs will represent *our* ideas, and not those of that mysterious "other man."

VITTORIO SELLA
SINIOLCHUN, HIMALAYAS — ALTITUDE 22,570 FEET
TELEPHOTOGRAPH FROM ZEMU VALLEY

THE AIGUILLES OF MONT BLANC

THE USE OF BOLTING-SILK

F. J. MORTIMER

FROM time to time certain methods for modifying the direct production of photographic prints are advocated and extensively employed by pictorial workers. These methods, after having enjoyed a vogue for a period, appear to die of satiation. Many a good process or method of print-reproduction has been worked to death in its infancy; sometimes by misapplication, which has brought it into disrepute. A typical instance is presented in the case of bolting-silk. We are not precisely certain who first employed this material for photographic purposes in the production of bromide enlargements, but there is no doubt that during the past six or seven years it has come into recognized use for securing an agreeable amount of diffusion when making enlargements.

During the year or two following its general application for this purpose it was no uncommon thing to find at many of the London or provincial exhibitions as many as fifty per cent of the exhibits bearing evidence of having been printed through bolting-silk.

This state of things could, of course, have but one result. Bolting-silk as an aid to pictorial effect became overdone, and the constant appearance of every variety of subject treated in this manner became nauseous. Now, the appearance

A SWISS LANDSCAPE

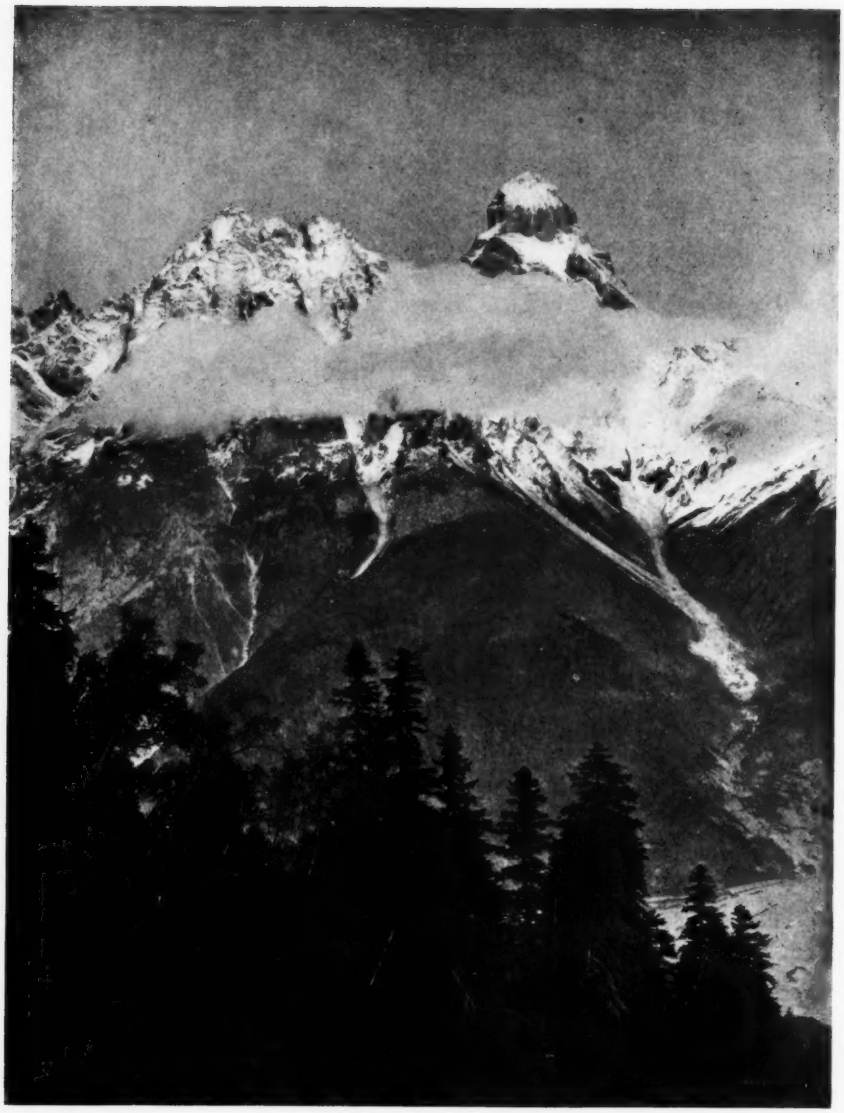
of a print produced through bolting-silk is the exception rather than the rule at exhibitions.

The fact that a great number of individuals indulged in this practice about the same time, and, in many cases, entirely misapplied the new power placed in their hands, does not, however, make the use of bolting-silk bad or unnecessary, as in many cases an undoubted gain in effect is brought about by its use.

Bolting-silk or bolting-cloth (more correctly spelled "boulting") is employed in the preparation of flour, and a "bolter" is a machine well known in the milling-trade for sifting bran from flour.

In appearance, bolting-silk resembles a very fine, somewhat stiff, gauze of perfect even mesh and texture. In application its effect is to produce a certain softness or "fuzziness," due to the breaking up of the hard lines and masses of shadows that would otherwise be produced by direct enlargement. The silk is interposed between the enlarging-lantern and the paper. During the inception of the idea it was also used in contact-printing — very likely the cause of its downfall, as in this case, or when the silk is placed so close to the bromide enlargement that the lines of the mesh are clearly imprinted on the paper, the effect of a coarse half-tone screen is obtained, which is not altogether favorable to the most satisfactory results.

To a great many amateur photographers at the present time — judging from the number of inquiries received on the subject — the application of bolting-



VITTORIO SELLA
MT. USHBA, FROM MAZERI VILLAGE — CAUCASUS RANGE

silk seems to be somewhat of a mysterious operation. The silk itself is now easily obtainable from most of the wholesale photographic-supply stores, and is made in two varieties or degrees of fineness.

The very fine variety will probably be found the most generally useful, and can be obtained up to about a yard in width.

The effect obtainable with bolting-silk varies according to its position in relation to the negative and paper on which the enlargement is being made, and it will be found that it is most easily employed when enlargements are made by projection rather than in an enlarging-camera.

For general use it will be found advisable to procure a fairly large piece of silk, larger than the biggest enlargement usually attempted, and have it stretched on a light wooden frame.

A light picture-frame will answer, but it will probably pay best to have a proper frame made by a carpenter. This will cost very little, and the silk is then always ready for use on the enlarging-easel.

The frame should be made of well-seasoned wood about an inch square in section. This should have mortised corners, and be further braced with metal angle pieces.

The silk should be attached to one side of this frame with Seccotine or strong glue, and stretched quite taut. Care should be taken that no creases or glue-marks get on the surface of the silk, or unpleasant patches will arise when printing through. If the silk can be removed it can always be washed and dried ready for use again, but if too securely attached to the frame it can be lightly sponged to remove any adherent foreign matter. It will dry quite taut again.

When the silk is securely glued to the frame four strips of stout cardboard an inch wide should be placed over the glued edges and fixed down with drawing-pins. This still further secures the silk, and also serves as a standard check when the frame is placed in contact with the enlargement.

The silk, fixed on its frame, can now be handled and used with the greatest ease. The best position in which it can be employed is about one-eighth to one-half inch away from the surface of the enlargement. The nearer the silk is to the print the more obvious the grain becomes; the further off it is the greater the diffusion. If one-eighth inch is decided upon as giving the best effect, the pieces of stout cardboard pinned on the silk side of the frame will probably give the right distance by bringing this side of the frame hard up against the print.

Other distances up to one inch can be obtained by pinning or tacking little slices of cork or card on the corner of the frame so as to bring it the correct distance from the enlargement.

At an inch distance the frame itself can be reversed, as it is presumed the thickness of the wood is an inch.

The enlargement is focused first in the ordinary manner, and the frame can be held in position during the exposure by the use of long dark-room pins driven into the enlarging-board at the top and bottom of the frame, or rubber bands can be attached to hooks on the frame and easel to hold the frame in position.

LOUIS J. CHRISTIE TIMBERLINE IN THE ROCKIES

There are several other positions in which bolting-silk can be employed. First, in contact with the negative, which can be done by sandwiching a piece of the silk between the film side of the negative and a piece of plain glass. The mesh of the silk is then enlarged with the image on the negative. Second, to keep the silk a short distance from the negative by stretching it over a piece of plain glass held in another carrier, say, about one-quarter inch from the negative.

The enlarged "grain" of the silk is thus put out of focus, and gives a "canvasy" appearance to the enlargement. Third, in contact with the paper itself. In this case the effect is generally unpleasant, and is never quite successful.

The best effects are undoubtedly obtained by keeping the silk from one eighth to one inch from the print; and a pleasing diffusion, leaving the sharpest details of the original quite undisturbed, is thus obtained. The effect of grain or texture can be entirely removed by gently moving the frame during the exposure.

In this case the diffusion appears to be greater, yet an inspection will reveal the finest details intact, although weak.

Another excellent application of the silk is to make half the exposure with the frame in position, and the remainder in the ordinary way.

The use of bolting-silk necessarily increases the exposure; this varies with the result it is desired to obtain, the fineness of the mesh, and the distance from the print. Generally speaking, however, about twenty-five per cent increase is a normal approximation, but the exact amount can easily be obtained by trial.

Diffusion of another sort is obtained by stretching the silk over the front of the lens during exposure; but in any case, unlike the diffusions caused by throw-

VITTORIO SELLA

MONTE ROSA AND LYSKAMM — SWISS ALPS

ing the negative out of focus, the methods indicated above do not destroy the strong lines of the original, and will retain fully the contrast of light and shade, not vignetting one into the other.

The method should not be used for small enlargements — 10 x 8 or under — unless the composition is very broad, consisting chiefly of masses of light and dark; and, lastly, do not use bolting-silk with glossy papers. The rougher the paper is the better the characteristic effect of semi-diffusion will be rendered.— *The Photographic News, London.*

A PHOTOGRAPHIC TRIP AMONG THE WHITE MOUNTAINS IN WINTER

CHESTER F. STILES

IT was on a crisp March morning that I received my first impressions of a snow-clad mountain. The keen, cutting winds made us shrink into our buffalo robes while we watched the dawn of day on the hills of Gorham. The mercury had not seen the zero mark for days, and the hammer of the horse's hoofs came forth in sharp metallic measures. Through the frosty mist which overlaid the Androscoggin Valley came a glimpse of Madison and the mightier Adams. Soon we had risen above the fog and the mountains reared boldly up in cloudless splendor — twin Dromios in cloaks of white.

Into the woods at Appalachia we plunged with buoyant spirits. Those versed in the tricks of the snowshoe will smile in fond recollection of their own initial ventures. The snow was in fine condition, and the twigs were buried deep below. But in the tangles of Mossy Glen the inevitable catastrophe ensued. An innocent twig which later proved to have a length of over six feet fouled the snowshoe. In a twinkling head was discovered where feet should be; the soft, chill, powdery snow explored the space between sweater and skin; and the hands in vain effort tried to push against the ground below. It was not until the veteran of the party had made a hasty photograph that the sputtering novice was disentangled and stood right side up; nor was harmony restored until the commissary undertook his noonday duties, which meant the distribution of a frozen sandwich, a handful of raisins, and an abundance of snow for drinking-water.

The giant boulders of King's Ravine near-by were partly covered with snow and ice. Here in summer we are wont to crawl in simian attitudes through the devious chambers of the "subway." Take warning, however, from the plight of one unfortunate, with a bulky pack, who had to be ejected by the aid of friends and force applied behind.

We now arrived at a point where snowshoes were of no avail, and we floundered to our waists in dry snow much like granulated sugar. Our snowshoes, meantime, dangled on our backs in tantalizing antics, interfering with every step and constantly fouling with the camera loads. A snowshoe on the back can be compared only to falling over a wheelbarrow.

The danger of slipping now replaced previous discomforts, and the leader, long experienced in this line of sport, was busily engaged in smashing the ice crust with his steel-clad pike. Slowly, inch by inch, we gained our height, stopping now and then to watch the mighty hurricanes which were sweeping blinding clouds of snow over the serrated crest of the precipices above.

The quietness of the natural amphitheatre below was depressing. No breath of air was stirring in its ghastly depths, now deep in shadow from approaching night. All was still save the blows of the pikes as they made assault upon the crust; but the musical tinkle of the ice-chips sliding rapidly down to the depths below had indeed an ominous sound — one which commanded instant respect for this giant incline. It was not a place for merriment; not a step was taken without consideration, and only when the pike and other foot were firmly anchored in the crust.

Across the profound depths of the ravine lay the slide-scarred slopes of Nowell's Ridge, already hiding the sinking sun. The shadow of the ridge had passed above our heads and the chill of night came up from the purple depths below. Adams glowed in the last rays of the sun as we dragged ourselves to the crest of the ridge and faced the icy blasts of the knife-edge.

The Madison Hut brought gladness and cheer to our hearts. What though the winds did howl and blow? We could at least have shelter from their icy breaths. If all could feel the debt of gratitude for the use of this hut which winter climbers realize we should never hear a single tale of its abuse.

The celebrated Madison Hut nestles between the spire of Madison and the profiled crags of Quincy Adams. Winter life here is unique. No porcupines disturb one's slumbers by their intermittent scratches and squeals; but the wind is never still, and howls around the corners like ten thousand demons let loose from the bottomless pit. Fuel is at a premium; the stunted spruces lie deep beneath the snow, and fuel-gathering becomes a mining-operation. We needed no ice-chest, for our steak was rigid; our mammoth pickles defied the teeth till thawed out; butter we repeatedly chopped with axes; and every drop of water for drinking, washing or cooking had to be melted over the fire from snow and ice.

A raging blizzard developed on our second night. We could venture only a few yards from the door of the hut, and then were frightfully battered. The throat refused the frost-laden air and the flying ice and frost cut into the face, making continued resistance impossible.

What must be the feelings of a man who has completely lost his bearings in such a storm? Fortunately, but few storms are frost-laden, but the bewildering element always exists. It was in the early spring that the writer had a

CHESTER F. STILES THE MADISON HUT

taste of worry on the sides of Adams. We had reached the minor fourth peak of Nowell's Ridge, the writer lagging because of a heavy camera-load. The clouds dropped quickly, but not before the bearings of big Adams were firmly in mind. In every direction rolled the white, interminable fog, and under foot the snowy carpet had obliterated all trace of path or guiding-cairn. I determined at once to ascend on Adams high enough to avoid deep gullies precipitating into King's Ravine, and when it was apparent that the regular Gulfside Trail was surely passed, a change in direction was risked to the east towards the hut. The suspense was not over until the head of King's Ravine was recognized, when a swift glissade down Quincy Adams brought me safely to the hut, which, fortunately, my companions had safely reached.

Stray weasels in their winter coats of white may often be seen near the hut, but larger animals rarely venture above timber-line. We of course except the famous dingmahaul, which from varied descriptions seems to be an acclimated

CHESTER F. STILES AN EXPANSE OF PEAKS

side-hill gouger. The celebrated Darwinian argument of environment as a potent factor in the development of a new species is here amply illustrated; for this strange beast, from his continual journeys over the rough peaks, has developed uneven legs — the shorter ones disposed upon one side and the longer on the other, so that he can move more rapidly about the mountain. At least, the tale is conscientiously vouched for by "Bick" of Gorham, and when a scientist brought forth one day a criticism that the dingmahaul could move only in one direction around the mountain, he was quickly nonplussed by the explanation of two species, a right and left handed one, according to the direction in which the dingmahaul was supposed to run.

Crossing the great northern peaks is a delightful way to reach Mt. Washington. A striking view of the cone of Madison is had from the head of King's Ravine, and from the summit of Mt. Adams one looks down upon the parapets, the cairn on Madison summit being over five hundred feet lower. Here one

S. J. THOMPSON
MT. FIELD AND EMERALD LAKE
CANADIAN ROCKIES

can look into the uttermost recesses of the Great Gulf, which was climbed two winters ago by Messrs. Hart, Whipple and Perkins under most trying circumstances. Sam Adams, the secondary peak to the west, also deserves a visit. From this point one has a unique view of Adams and Madison standing, like twin brothers, side by side.

Of Jefferson, no view-point seems to exist where one can get a massive appearance in the camera. Jefferson summit is, however, the point *par excellence* for the view of Washington, which from here stands up with greater mass than from any other view-point.

Few phenomena are more striking than the shadow of Mt. Washington projected by the setting sun upon the opposite horizon. We may perhaps see the observer's shadow projected on the mists below, with a "glory" around the head. Possibly more common is the corona which comes when thin snow-clouds pass over the sun. Beautiful concentric rings of color are formed, and in some cases they are seen around the moon. The most gorgeous display is the complete halo system about the sun, of reverse order to the rainbow colors. The tangent arc of 46° which in winter lies toward the zenith has proven bright enough to be photographed against the actinic sky.

When northern winds sweep down upon Mt. Washington a transformation scene is enacted; the rocks and buildings take on fantastic shapes, and there results a fairyland in white and blue. When the winds are constant the frost-feathers attain incredible lengths, but a shift in the wind soon brings destruction to the brittle mass. A high wind acting on the crust produces furrows and grooves in sinuous curves formed by the flying fragments of crust. Some of the wind-carving resembles the eroded rocks of our geologies. Stranger still is the effect produced by walking upon soft crust. The foot compresses the snow to ice, the snow is eroded by the wind, and presto, you now have a line of footprints on pedestals. One does not need the acuteness of Sherlock Holmes to follow a clue on Mt. Washington.

Of distant points visible from the mountain, there is much dispute. Our view sweeps from Canada to the Atlantic, two countries and four states being visible. There is no question that some Adirondacks peer over the Vermont mountains. Megantic shows in Canada, and Wachusett represents Massachusetts. Katahdin is eliminated from the argument decisively, and the alleged peak proved otherwise.

We can hardly deem this wonderful view a thing of beauty. Scarcely a suggestion of man appears; the purple and white tones of winter suggest that the human race has become extinct. From whence came these immobile masses, eroded and cleft by bold ravines, which lie enshrouded in the pallor of winter? Man pales into insignificance, and thoughts turn to higher things.

A gorgeous sunset, blue, brown and gold, succeeded by a lurid conflagration on the clouds, is quickly over. Night falls quickly hereabouts. Now is man's presence discovered below. Over the shoulder of Madison twinkle the lights of Berlin, a locomotive headlight approaches up the Androscoggin at

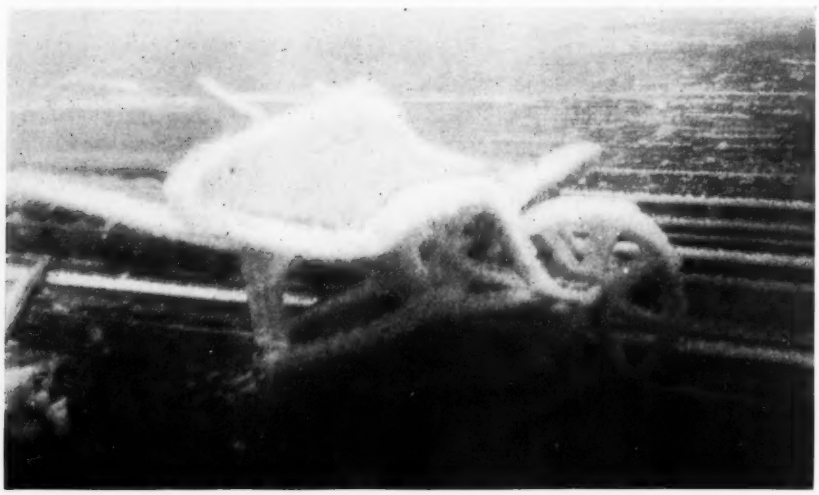
Shelburne, or a glow of light on the smoke of a puffing freight is seen down in the Notch; Littleton, Lancaster, North Conway, Lewiston and even the glow from Portland are all visible. Here and there at a tiny farm in Jackson or at the Glen House below we see twinkling lights, and feel that we are not alone.

The summary of photographic experience of repeated winter-trips into the mountains indicates the following necessities: a camera of box type, with a simple shutter, the lens at least double the ordinary length of focus, and a plentiful supply of color-sensitive plates. The danger of breaking plates is great, and the utmost care must be exercised. A tripod is bothersome, yet, if pictures are required without fail, the heavy outfit is indispensable.

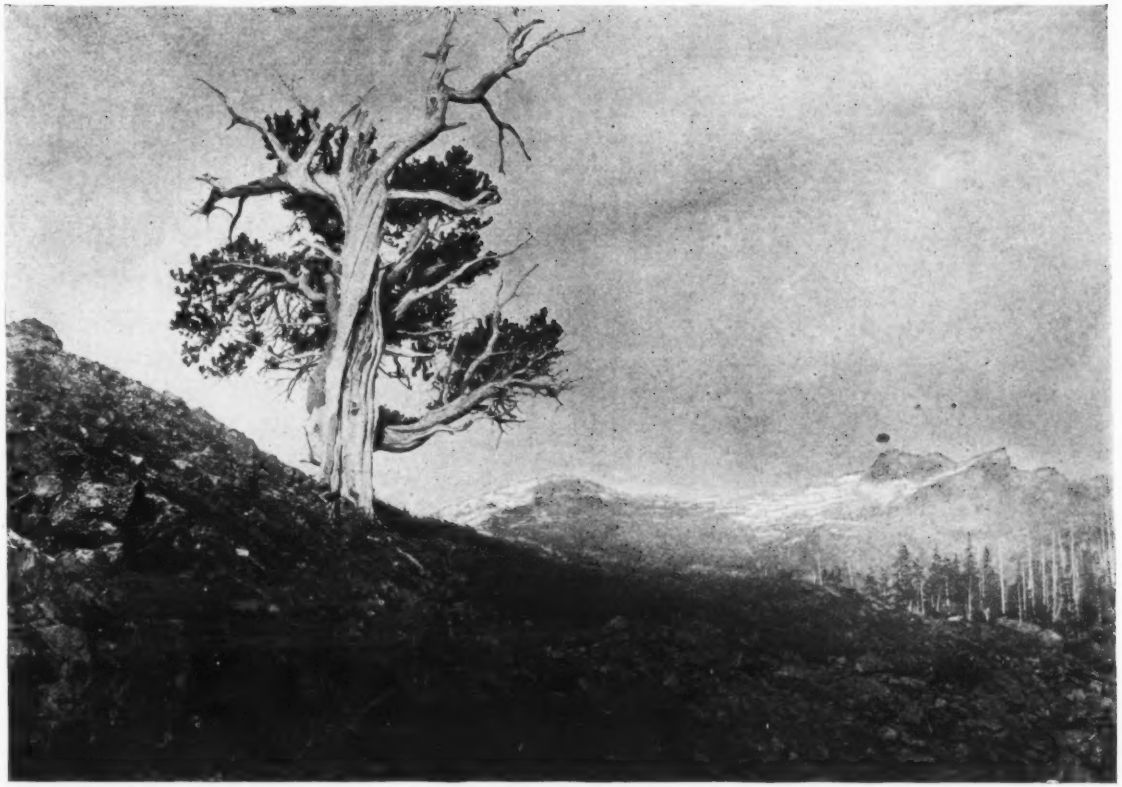
Ingenuity will devise a means of changing plates under blankets at the hut, or a changing-bag, which takes up practically no space whatever when folded, can be used. Descriptions for making such a bag have been so frequently published that a repetition here is unnecessary. If films are used, they must be turned deliberately, or electric marks are almost certain to appear. Metal shutters sometimes stick, which trouble usually occurs when stepping into a chill shadow after bright sun, and the frost may also condense on the lenses, or even on the plate inside. This trouble is momentary, however, and will pass away.

Exposure is short, on account of the brilliant and richly actinic light. This actinic light will also produce a sunburn discounting any seashore burn, and in a few days whole patches of skin may be pulled off intact.

Development I prefer in eikonogen-hydroquinone or rodinal, in every case developing until a very dense negative results; otherwise, I find that the full color values are not carried through to the print.



CHESTER F. STILES FROST-WORK ON MT. WASHINGTON



THOMAS A. MORGAN

THE LAST TREE

MARS AND RECENT RESEARCHES

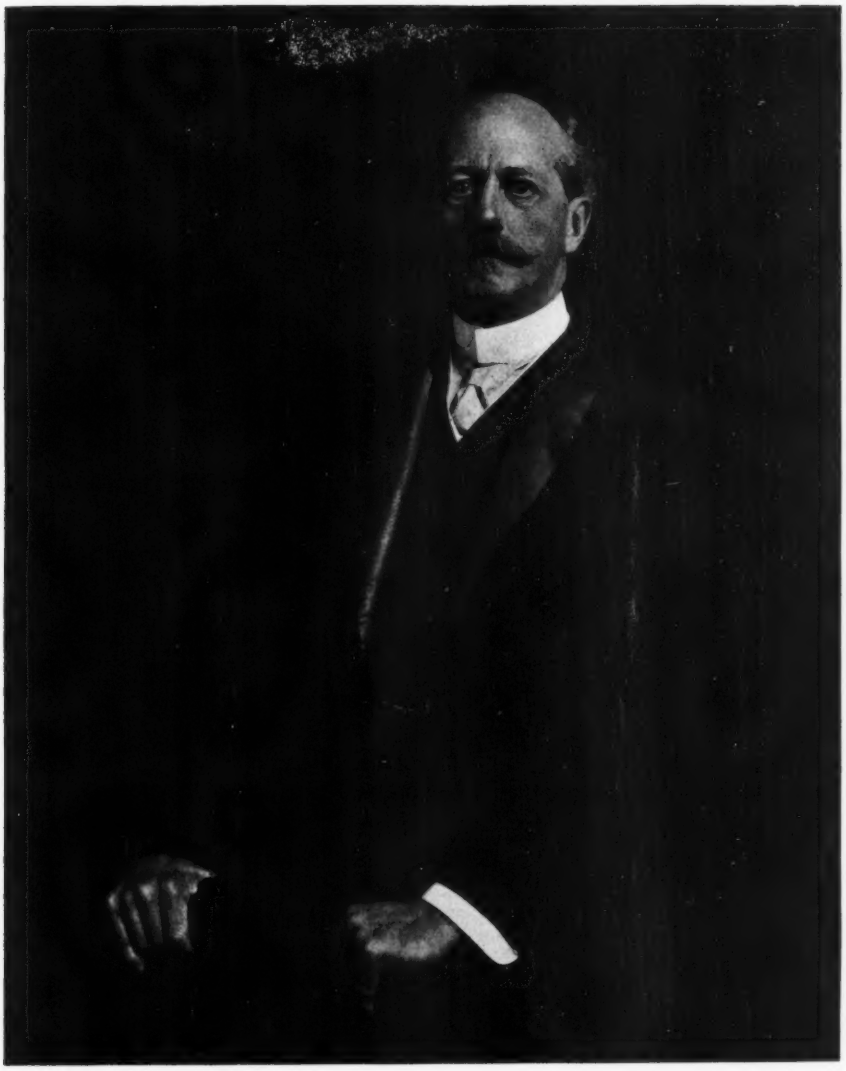
JOHN RITCHIE, JR.

OF all the problems that modern photography has to offer, there is not one involved in so much difficulty as the photographing of astronomical objects. Departures from absolute accuracy, whatever be the source, whether the fault of the lenses, the focusing, the plate or the lack of skill or care in manipulation, are likely to produce effects which are difficult of detection and misleading to the investigator.

In all the varieties of astronomical photography there is no branch more difficult than that which involves the images of the planets. Although the work of observing and of photographing planetary detail has been one of the objects of astronomers for many years, the photographic results have been in the main extremely disappointing. Photography of the stars is dealing with fixed points of light, but with the planets it involves the catching of the markings of their disks. For this a very high power is necessary, and with the employment of magnification in astronomy the difficulties begin. The least trustworthy of the factors which are involved in photography of the heavens is the atmosphere, which through its irregularity in quality, in humidity or in temperature, may refract unequally the different portions of the image. This has its effect upon the result; for while in visual observation the eye can look while the seeing is fine and discontinue its work during the moments of poor seeing, the camera must accept the distinct and the indistinct together. It gets a composite of the good and bad images that succeed one another during the time of exposure.

The importance of knowing more about the members of our own solar system commended itself to Mr. Percival Lowell, of Boston, with the outcome of the establishment of an observatory dedicated to planetary research, which is located at Flagstaff, Arizona. It is one of Mr. Lowell's personal contributions to the cause of science.

When a man wishes to establish an astronomical observatory, he is actuated, usually, by one of two motives: either to endow some institution with additional means of research, or to advertise himself or his business. The result of the first wish is the founding of an observatory in some established centre of learning, where industrial conditions often injure the quality of the results; while the second idea is likely to prove still more unfortunate in its selection of the site. Unhampered by either one of these considerations, Mr. Lowell sought for the best spot in the country in which an observatory could be placed. His choice fell upon Flagstaff, a town of some eight hundred inhabitants. It is situated on a plateau which rises above the general level of the desert some 3,000 feet, and the observatory, which is 350 feet above the town, is at a height of 7,250 feet above sea-level. The geographical position of the observatory is Latitude, north, 35° 11′; Longitude, west, 110° 10′. The institution was opened in 1894, in time to catch the opposition of Mars of that year, which was an excellent one for observation.



PERCIVAL LOWELL
BY J. H. GARO

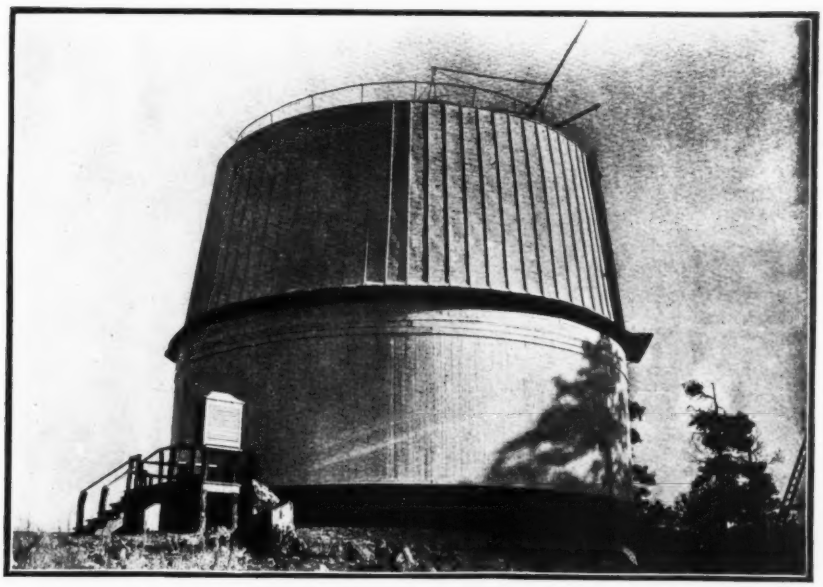
The selection of the site has been amply justified by the results, the atmosphere being of superb quality, with few storms or disturbances. The purity and steadiness of the air is shown by plates taken with the twenty-four inch telescope of the region following δ Ophiuci. These show 172 stars. Plates taken at the Lick Observatory of the same region show 161, the additional Flagstaff stars being of the sixteenth and seventeenth magnitudes. Plates taken at the United States Naval Observatory in Washington show 63 stars. The Lick telescope, from its greater size, ought to have greater space-penetrating power. Any difference may be put to the better conditions atmospherically at Flagstaff.

The equipment of the Lowell Observatory is for the special purposes for which the institution was founded. The first telescope was from Brashear, of Allegheny, of eighteen inches diameter, which has since been replaced by a twenty-four inch Clark refracting telescope. The main dome of the observatory is a drum, thirty-four feet in diameter. The construction is light, so as to permit of the most rapid equalization of temperature between the interior and the outside air. There is in addition a six-inch Clark telescope occupying a little dome to the west of the greater one, and also a Brashear photographic doublet and a complete spectrographic outfit.

Near at hand to the observatory Mr. Lowell erected his first simple house of a room or two in addition to the laboratories. This portion of the establishment has grown through various additions so as to include some fourteen or sixteen rooms. Besides, there is an astronomers' house and a lodge. The park which surrounds the observatory now includes some fifty or more acres.

Now a few words as to methods. The telescope of twenty-four inches aperture is on the Petzval system, and was made for Mr. Lowell by the Clarks. In practice it is diaphragmed down to twelve inches. An intermediate lens gives the focal image an amplification of four diameters. The telescope has been used at nine inches aperture with good results. Many experiments were made in plates, with the selection of the Cramer isochromatic. For the photography of the planets an orthochromatic screen is used. This is of a special formula made by Mr. Wallace, of the Yerkes Observatory. It is figured for the color curve of the objective of the telescope, and takes into consideration also the curve of the sensitiveness of the plate. The screen permits only the yellow rays of light to pass, and under the strictest of spectroscopic observations no loss in intensity is observable. The usual time of exposure is eight seconds, the telescope being given motion by the usual clock. One of the appliances that has been tried was in the form of a bioscope in which the plate is worked by hand. This permits many images of the planet to be caught on the same plate.

One of the important elements in the observations is one that would escape altogether the attention of the novice, a knowledge of atmospheric conditions. For more than ten years meteorological observations have been kept there by Mr. Lowell's assistants, and as the result there is possible a close prediction of the coming conditions of the atmosphere with reference to the seeing.

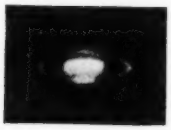


PROFESSOR LOWELL'S COTTAGE
LOWELL OBSERVATORY, FLAGSTAFF, ARIZONA

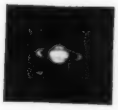
While the Lowell Observatory includes all the planets in its scope, particular attention has been paid to the planet Mars, from the fact that it is our nearest neighbor and the one regarding which we are most likely to secure definite and satisfactory results. It has therefore been an object of particular importance both visually and with the camera. But before Mars was attacked, a great deal of preliminary work was done on Jupiter and Saturn. The photographs which are here reproduced will give an idea of the comparative success of the work. They necessarily lose much in the process of preparing them for printing, but they are an example of the best that photography has been able to do with these objects. The ringed planet is very prettily shown, and one can get an idea of the belts of clouds which form the strongest feature of the giant of the planets, Jupiter. Photographs have also been taken of the disk of Mars.

The observations on Mars, which have formed so important a part of the work of the Lowell Observatory, began in 1894 to verify what Schiaparelli, the Italian astronomer, had already noted about the disk of the planet; namely, that there were certain remarkable markings on the surface. It was thirty years ago, very nearly, that Schiaparelli made his announcement that he could see long, thin lines reticulating the surface of Mars, lines to which he gave the name "canali." They were the canals of Mars. For many years no one else saw them; then a Frenchman or two verified some of the markings. The condition was much the same when Mr. Lowell began his work at Flagstaff: very few of the telescopes of the world had been able to show the canals, let alone other peculiar appearances connected with them. Mr. Lowell announced at once that the canals were visible at Flagstaff and began the systematic work of observation. Throughout it all there has been more or less disbelief in the actual existence of the finer of the markings. It has been, therefore, of great interest to have the camera verify to the world what the trained eyes of the observer saw.

In 1901 Mr. A. E. Douglas, assistant at Flagstaff, tried to take photographs of Mars which would show the canals. For this purpose he used a Wallace screen. He was successful in getting some of the larger markings,— the seas for example,— but no canals. During the opposition of 1903 attempts were again made, without great success. In 1905, however, Mr. C. O. Lampland was more successful, and secured the first photographs of Mars which showed the canals. Some seven hundred images of the planet were thus taken, which, so far as they go, corroborate what has been seen by the eye. These have been examined and approved by astronomers here and abroad, who are familiar with the nature of planetary markings. But it is to be regretted that they are not of a character which will permit of reproduction for popular inspection. The canals are delicate hair lines in the photographs, which are visible to the eye and through the magnifier, but they defy as yet the skill of the printer. It has been quite customary in the past to retouch the negatives or the prints intended for the illustration of astronomical work, but in this instance the evidence which they bear would be spoiled for the purpose for which they were taken if but a single brush-stroke or a cut with the graver were added to what nature has im-



SATURN



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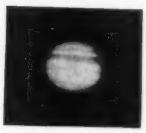

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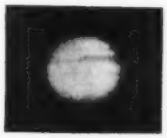

JUPITER

PHOTOGRAPHS BY C. O. LAMPLAND, TAKEN AT LOWELL OBSERVATORY

printed there. They bear their testimony in their own way to those to whom their message is intended, the astronomers,— and a strong message it is,— but the hints that they bear are a bit too delicate for spreading abroad in the non-professional world. We must be content for the present with the pictures of the two larger brothers of Mars, Jupiter and Saturn.

What Mr. Lowell has accomplished at Flagstaff forms a very interesting story, an important addition to the astronomy of the times. When he began his observations, in 1894, Schiaparelli and one or two others were all that there were in the world who had seen the canals. Important stations like the United States Naval Observatory in Washington had not been able to make any observations of them at all, or even to see them. The mass of observations taken at Flagstaff is therefore of the greatest importance. During each opposition hundreds of drawings have been made by the different members of the staff, which have been published in part in the proceedings of the Lowell Observatory. At each succeeding opposition the mass of material at hand has become of the greater importance; the more so since photography is beginning to lend its aid. The observations include the verification of the earlier canals and the discovery of an extended network of "new" ones. The curious phenomenon of the doubling of some of the canals, the "oases," as they are called, round spots at the intersections of many of the canals, and many other features have been noted. Curious changes in visibility have been systematized, and many other phenomena have been observed. The work has been of the greatest importance, and in it photography has played thus far a minor though not unimportant *rôle*, since by it the existence of the canals, their duplication and the existence of the oases, have been proven to the world at large.

These observations lead to other, very important, considerations, principal among which is the question, Are there inhabitants on the planet Mars? This question has recently been taken up in a systematic way by Mr. Lowell in a course of lectures in the Lowell Institute, a brief review of which, together with some charts of Mars, will form the second portion of this paper.

[*To be continued.*]

EDITORIAL DEPARTMENT

THE MOUNTAIN-PHOTOGRAPHS OF SELLA.

THE extreme technical difficulties attending the successful photography of mountain-views, especially the regions covered by perpetual snow, is a matter that has engaged the attention of many an ambitious worker. The average camerist, in endeavoring to depict the snowy crest of some lofty peak, has long labored under the impression that such a subject, on account of its extreme brightness, required the shortest possible exposure, and results obtained under such conditions have been far from satisfactory, being on a level with the ordinarily inadequate snow-picture, in that they represent, not the object as it appeared to the eye, or even on the ground-glass, but a meaningless, blank, white space — due simply to under-exposure. Of course, the camera can no more obtain a modified view of a blinding mass of snow or ice than it is possible for the human eye to behold, other than is impressed upon the retina — an annoying, white blur. Effects as observed through a piece of smoked glass are not supposed to come within the sphere of photography, as they do not appeal to the artistic sense. Winter scenes, that are easily accessible, have been photographed with the utmost success for the last fifty years. Among the early successes in this line that created a great sensation at the time are "Niagara in Winter," by Barker and Curtis. It is needless to say that they have not been surpassed in pictorial effect and technical excellence. When it comes to snow-scenes in high altitudes, eminently successful photographs of this character have not been made for many years. Among the foremost workers in this branch is Henry Speyer, who, possessed of a complete practical equipment, a highly developed artistic sense and profound sympathetic feeling for his subject, has given to the world a number of superb mountain-views, comprising peaks, glaciers and crevasses — all illustrating the picturesque beauty of the Swiss Alps. The scope of this intrepid artist's work is the subject of an illustrated article in the *Practical Photographer Series*, No. 10, which is devoted to "Winter Work."

Eclipsing Henry Speyer in daring, and, like him, master of all the technical difficulties photography presents, is Vittorio Sella, whose achievements in the realm of mountain-photography have astonished the world. Elsewhere in these pages will be found an appreciation by Professor Fay of Tufts College, Massachusetts, himself an enthusiastic mountain-climber and an intimate friend of the distinguished Alpine photographer. The Sella prints are not so well known to the photographic fraternity of this country as they should be, the more is the pity; but this circumstance is due to no fault of the artist, though rather to insufficient interest shown by his fellow practitioners. This may be explained by the fact that, as pictures, Sella's productions are somewhat out of the ordinary, lacking, as they do, form and variety of composition afforded by mountain scenery in which forest, tree, cliff and stream add to the general pictorial effect.

It is true that a sea of snowy mountain-tops does not lend itself to conventional artistic treatment; but instead we have a scene, as depicted by Sella's camera, which, for imposing beauty and sublime and awe-inspiring majesty, transcends all else that bountiful nature presents to the human eye.

Sella's photographs display the full range of gradations — all the delicate nuances of light and shade, fine detail and exquisite form, that mark the true character of a snowy surface. As orthochromatic plates are used by Signor Sella, all the values in the glacial picture are rendered with astonishing fidelity and vividness — so much so, indeed, that the eye is fairly dazzled by the bright sheen of the snowy fields. Clouds and mist, which form a frequent accompaniment to a mountain-view, are treated in a masterly fashion by the skillful Sella. It is not enough for man to ascend into the high regions of eternal snow; but to convey a large and cumbersome photographic outfit with all the necessary appurtenances to an elevation of some 18,000 feet and to expose a large number of plates, including many of a panoramic and telephoto-character, among almost insuperable difficulties, as was done on the expedition into the Himalayas, is a feat that is as extraordinary as it is unparalleled. Thus to Sella belongs the credit of having achieved the highest in the realm of photography and, at the same time, results which in their rare technical perfection have revealed to mankind the majestic beauty of the highest mountain-ranges in the world.

REALISM AND IMPRESSIONISM IN ART.

THE controversy between the adherents of the two schools of art — realism and impressionism — has been a long and bitter one, and while the latter has not swept everything before it, it practically dominates the art of painting to-day. This interesting situation formed the topic of a lecture, which was given, December 12, before the Boston Art Club, by that brilliant and versatile painter, writer, lecturer and engineer, F. Hopkinson Smith. The topic must appeal to the distinguished artist very strongly, for he handles it with great enthusiasm and in a very masterly and convincing manner, indicating, with the aid of fitting similes, the extremes of both sides, and expressing a desire to see the adoption of a middle course. He described, in his own vivid and forceful way, the method by which the realist constructs his picture, dwelling upon the artist's love of detail, deliberate calculation of form, outline, tint, even minute details of material and construction — all at the sacrifice of breadth, dignity and permanent charm. When the artist exhausts all that is visible to the eye in the scene he portrays, he leaves little or nothing to the imagination, either for himself or the beholder of the completed picture. This doctrine holds true even of the most illustrious exponent of the modern school of realism, be he Vibert, Gérôme, Meissonier, Bouguereau or Détaille. Admirable as are the works of these artists, in conception and execution, they delight, they astonish. They even charm, but not in the degree that do the masterpieces of Millet, Corot, Rousseau, Daubigny, Diaz — the founders of the Barbizon school. These deal with the emotions exclusively; they stir the imagination, they fill the soul. For this reason the works of a Millet

or of a Corot possess a charm that is enduring. The fortunate possessor of such a picture will never tire of it; he can live with it always.

We do not know Mr. Smith's opinion of photography as a means of artistic expression, or even its possibilities; but his lecture could hardly have been more welcome to the progressive photographer had it been expressly prepared for him. We were fortunate to be present, and took the remarks of the distinguished critic directly home to ourselves.

We sincerely hope that the enterprising photographic societies of this country will lose no time in trying to arrange with Mr. F. Hopkinson Smith to deliver before them his superb discourse on "Realism and Impressionism in Art."

A PLEA FOR KNOWLEDGE OF TECHNICAL PHOTOGRAPHY

A FAVORITE bequest to public institutions nowadays is a collection of photographs. Unfortunately, many of these are of doubtful merit and scarcely deserve the space they occupy. Not long ago we read in the newspapers of a large Eastern city that its Public Library had been the recipient of a notable gift in the nature of an extensive collection of photographs, representing the masterpieces of painting and sculpture of a famous European art-gallery. This important statement was accompanied by the name of the donor, a person of no particular distinction, and the announcement that these valuable pictures would be on exhibition in a certain well-lighted room of the Library. Piqued by curiosity, we inspected the collection. The first glance convinced us that the Library had been sadly imposed upon. The photographs clearly showed the effects of age, having been made during the early days of the wet-process, or about 1865. They were the unmistakable product of unskilled hands, and now, faded and discolored, presented a lamentable appearance.

We recall another instance of doubtful generosity. Here the photographs — all architectural — represented the buildings as shockingly out of plumb, the vertical lines of each subject converging towards the top. Besides, the prints showed the results of extreme under-exposure and careless chemical manipulation. To offer for public exhibition objects like these is an insult to the intelligence of the community. It is, perhaps, only reasonable to suppose that not one of the officials of these noble institutions of learning had the faintest idea of what constitutes a technically perfect photograph, and yet these and other educational institutions are permitted to foist upon an unsuspecting community productions not worthy the name of photographs. To correct such an evil, it might be well to suggest that, before accepting, by donation or purchase, any photographs of importance, the officials of an institution of learning consult a competent photographer. There is at least one such in every city of small size in the United States. Such a course will ensure the acquisition by our educational establishments of only the best productions of the camera, which are acknowledged to be better substitutes of the originals than badly executed copies. Here, surely, is a large field for photographic missionary work. Will our numerous photographic societies be equal to the occasion?

THE ROUND ROBIN GUILD

Conducted by Elizabeth Flint Wade. Specially designed for the amateur photographer and the beginner. Membership may be obtained by sending name and address to the PHOTO-ERA.

'T is the first day of January, 1907, and the "Bells, the old familiar Bells, our own constant, steady friends, are ringing the joy-peals for a New Year, ringing so lustily, so merrily, so happily, so gayly. . . . Bless their sturdy hearts, they are ringing with all their might; melodious, deep-mouthed, noble Bells, cast in no common metal, made by no common founder."

Surely these inspiring bells are ringing in a year which shall prove the very best of all we have ever known; and as each day slips down the string until the rosary of the year is counted, may it prove better than the one that went before — better to you, better to me, better to all of us.

The way to make each day better is to "take up our daily round, as one new-armored for the fray," and who follows this plan will find himself "to-morrow stepping on solid ground." Just another way of saying that there is no time like the present, and, whatever our vocation or avocation, we must bring to it fresh courage, fresh endeavor, and pursue the day's work so well that we shall find the next day's work smoother for the good work that has preceded it.

In our Guild work we are each going to do the very best work we have done yet — work that shall be worthy of a place in the first class.

In watching the progress of those members of the Guild who have been members ever since its organization one cannot but be gratified at the excellent work being done by those who were beginners, with no photographic knowledge whatever. Some of these are doing work which takes high rank both artistically and in mechanical finish. There is always room up higher, for the high places are seldom crowded in any profession, and we look to see more of our members on these altitudes before the year draws to a close.

January is the "Calendar month," or the month for new calendars. If one has omitted some friend from the Christmas gift list, and desires to send him or her a remembrance, nothing could be more appropriate than a calendar adorned with one or more of his photographic prints. The most convenient calendar form is that where the months are arranged in consecutive order one under the other, so that one may look either forward or backward without turning leaves or lifting sheets of a calendar arranged with lapping leaves. Many firms issue calendars printed in this style; usually the banks have their calendars printed in this form, and one can utilize the calendar part and surround it with pictures to fit the round of months. A calendar which one member has made for a friend's study is a long panel headed with January and ending with December. The leaves were taken from a calendar and pasted on cardboard, then at the side corresponding in size to the size of the monthly sheet were twelve pictures, all of familiar scenes to the one who received the gift. A strip of glass cut the size to cover both pictures and calendar was passepartouted to the cardboard and protected the calendar from dust and dirt.

In an early number of the PHOTO-ERA, "Round Robin Guild," may be found many suggestions for the arranging and adornment of calendars; in these days it is necessary to have a calendar in every room, so one is always an acceptable gift, especially if it is decorated after the manner suggested.

At Christmas-time the shops are full of beautiful calendars, and if one has originality and uses his eyes and imagination to

the best advantage he can originate a design for a calendar and have it ready for the coming year. To encourage this gift of originality the PHOTO-ERA offers in this number a prize for the best design for a calendar received before February 28. The calendar must have four leaves, and the designs must in some way typify the four seasons, spring, summer, autumn and winter.

ROUND ROBIN GUILD COMPETITIONS

First prize: Value $10.00
Second prize: Value $5.00.
Third prize: Value $2.50.

Prizes may be chosen by the winner, and will be awarded in photographic books or magazines published or advertised by us; in enlargements, art portfolios of photogravures, mounts, or other photographic materials advertised by us; or, if preferred, we will send any article of a photographic or art nature which can be bought in Boston for the amount of the prize won.

RULES

Membership in the Round Robin Guild, with all its benefits — among which the correspondence privilege probably stands first — is free to all, and we invite every photographer to become a member. Entrance in the monthly competitions is also free to all, whether subscribers to PHOTO-ERA or not.

SUBJECTS FOR COMPETITION

December — "Snow Scenes." Closes January 31.
January — "Calendar." (See above.) Closes February 28.

SYSTEM

The one thing that makes or mars one's photographic career is the attention paid to "system." If one is systematic in his habits, then things will go smoothly or with comparatively little friction; but if one is unsystematic, then efforts along the lines of photography are mostly unsuccessful. Though every vocation and every avocation is dependent on system for its success, yet perhaps there is no one pursuit which suffers more from the lack of system in its follower than does photography. Its very nature demands that in order to obtain good results it must be pursued in a systematic and methodical way, and that one must be so orderly that all one's appliances may have each its proper place and be found there when not in use.

Take for instance the matter of negatives. Unless one begins at the very first to index and arrange his negatives and store them in such a manner that he can find the one he needs at a moment's notice, he soon accumulates a collection of plates which grows each week larger and larger, according as he pursues his hobby more or less vigorously.

The first thing is to obtain a suitable case for the negatives, and then, as each one is made, if it is worth keeping, it is properly entered in the index and then placed in its proper place in the case. In an early number of the PHOTO-ERA will be found a description of a case for holding fifteen hundred negatives, which may be made at a trifling cost and which, once made, will be a continual satisfaction to its owner. Directions for making such a negative-case will be found in the PHOTO-ERA for January, 1902.

For one who uses films a simple yet most satisfactory way of filing them for convenient use will be found in the PHOTO-ERA for March, 1905.

Then there is the matter of formulæ. A most convenient way to preserve them and have them ready for instant use when needed is to make scrap-books of manila paper, using one book for developers, one for toning-solutions, one for the suggestions for remedying negatives, etc., etc. Go to the wholesale dealer in papers and buy several reams of manila paper. The sheet is of large size, so fold each sheet, doubling it in the same way as does the book-binder his uncut leaves, until the book when finished will be about 10 x 14. Put a number of these folded sheets together, say enough to make a forty-eight page book, and sew through the centre with stout thread. Then put a stout string through about four inches from the top, thread on it a brass ring — they are

bought by the dozen — tie the ends of the string together, and there you have a hanger which is easy to manage and never gets twisted on the nail. Write in large letters on both back and front cover the name of the book, or rather the name of the kind of formulæ which it contains. If one is especially systematic, then the different formulæ for certain kinds of developers should be grouped by themselves, though this is not necessary. In pasting in the formula leave wide margin, as the paper is smooth, takes the ink nicely, and one can make notes in regard to the formula which will be found most helpful when it is used again. Most dealers send out handbooks containing excellent formulæ, but they are small and not easily stored in convenient shape for handy use. However, the generosity of the dealer makes it possible for the amateur to obtain two copies of such handbooks, and he thus is able to clip out the formulæ, using the two books, and paste them in his scrap-book. Here again comes in the help of system. Over each formula write the name of the handbook or paper from which it was clipped.

For years the editor of the Guild has made and used scrap-books such as have just been described; in fact, they were her own invention. When pursuing some special subject, no matter what, a scrap-book of this kind is always a valuable adjunct, as all material pertaining to the subject is clipped, pasted lightly at the corners, then later, if found valuable enough, transferred to a scrap-book of more permanent form. However, these cheap, quickly-made scrap-books are very serviceable, two of the first ones made years ago still being in use, and, aside from the fact that the paper has grown still yellower with age and usage, being just as good as when they were made — better, in fact, for their contents could not be replaced, and the contents are almost invaluable.

These scrap-books should be indexed, but that is an easy matter, for as each formula is added it is given its proper place in the index.

Another thing is the labelling of bottles. One may buy the gummed labels, but they are small and soon become loose from moisture or from the nature of the solutions which, running down the bottle, cut the gum and destroy the paper. A permanent label may be made by taking a good quality of linen paper, cutting it in strips two inches wide and long enough to reach around the bottle and lap at least an inch. Lay the strip on a moist blotter, paste the surface thoroughly, then attach it to the bottle, lapping the ends over and rubbing down smoothly. When the strip dries it will have shrunken a little and so does not become detached from the bottle, the lapped ends aiding in holding it in place. The contents of the bottle can be written either directly on the paper or one of the gummed labels may be pasted to it, and at any rate the paper will stick to the bottle. Tin cans from which labels become detached easily may be treated in this way with the lapped bands and will retain their labels indefinitely.

DEVELOPERS

There is no doubt that pyro is an excellent developing-agent, and pyro in the hands of a photographer with long experience in its use can produce very beautiful negatives of remarkable printing-qualities. Pyro devotees are very apt to look with scorn on almost every other developing-agent, but amateurs, especially those who love to experiment, will not be satisfied with one special developing-agent. In fact, many of the developers have much the same effect as pryo without all the attendant unpleasantness of pyro.

Rodinal, for instance, is really a developer with which one can produce almost any kind of negative, according to the degree of strength and of the solution and the time of exposure of the plate. It comes in a concentrated solution and needs only the addition of water to prepare it for use.

One of the special merits of rodinal, as claimed by its projectors, is that it is adapted to any plate in the market — which, while it is a statement of rather sweeping magnitude, yet is more or less true.

If one takes one part rodinal and adds

to it fifteen parts of water the detail comes up very quickly and the lights and shadows have strong contrasts. If one part rodinal and thirty parts of water are used the detail comes out slowly, the shadows are soft and full of detail and the high-lights never glaring or over-developed.

If one has plates known to be under-exposed, then they may be placed in a bath composed of one part rodinal and fifty parts of water, and left to develop. They can remain in the solution indefinitely without danger of fogging.

Plates that are over-exposed are placed in a strong solution of rodinal, one part to ten or fifteen of water, to which is added a generous quantity of a ten per cent solution of bromide of potassium.

ENLARGEMENTS

There is no process of photography which seems so complicated to the uninitiated amateur as the making of enlarged photographs, yet there is nothing much more simple. In the first place one requires no elaborate apparatus, the things needed being already at hand, thus making the actual outlay merely the sensitive bromide paper on which the imprint of the picture is to be made. The preliminary work consists in arranging room and camera in such a manner that the only light which can enter comes through the negative placed close against the window and passes through the lens of the camera and produces an enlarged positive image of the negative on a screen arranged for this purpose.

The simplest and most convenient way to insure the parallel arrangement of negative and screen is to have a board five or six feet long and about a foot wide on a table with one end of the board placed squarely against the window-pane. Across the board mark at different distances lines at right angles with the sides, using for the purpose a square. These lines are guides in placing the support for the sensitive paper on which the enlargement is to appear. This support is simply a wooden box, the bottom of which is covered with white paper, and unless one wishes to make a very large picture a box eighteen inches square will be large enough.

A room with one window will be found more convenient for the work, as all actinic light save that which enters through the negative must be rigidly excluded. Heavy opaque cloth, such as a dark-colored canton flannel, will be necessary for darkening the window, in which a small opening must be made and enough leeway given to enable the camera with the negative to be put through. If one has a camera with a removable back, as is the case with most hand cameras, the back is removed and the focusing-glass taken from the frame, a negative put in its place, and inserted in the camera. The camera is then placed on the board with the negative against the window, the light which enters around the opening in the window-covering is stopped out with a piece of opaque cloth, and the support for the paper — the wooden box before mentioned — is placed on the board with the papered side toward the camera. The object of the lines across the board is now apparent, for if the box is adjusted along one of these lines it stands parallel to the negative.

In regard to the focus, the amateur will find it more convenient to move the box back and forth until a clear focus is reached rather than to use the focusing-screw of the camera. The editor in making enlargements sets the scale at six feet and secures a sharp focus by simply placing the box at the right distance from the camera.

The length of exposure varies according to the density of the negative and the intensity of the light. It is always wiser to make experimental prints, taking small pieces of paper and exposing them in turn one-half minute, one minute and one and one-half minutes. As the exposures are made, mark the time on the back of the paper, and development shows you which exposure is approximately correct.

In making gaslight pictures or enlargements on developed paper it is always a wise plan to mark on the negative envelope the time of exposure which has been found to be correct; then if at any

future time one has occasion to make such pictures, time is saved by knowing the correct exposure.

In arranging for an enlargement remember that the nearer the lens is to the negative the larger will be the picture, and the farther away the lens is from the negative the smaller will be the image.

When the correct focus has been obtained mark on the paper the position of the sensitive paper, close the shutter and by the light of the dark-room lantern secure the bromide paper in place by means of artist's thumb tacks. Care must be taken not to move the box during this process, and when it is in place a flatiron set inside will prevent its being moved easily. The exposure being made, the paper is soaked for a minute or two in clear water, then developed in any good plate-developer, though metol-hydrochinon will be found to give most excellent prints and is usually preferred by expert workers to almost any other developer.

While occasionally large pictures are desirable, the amateur will find that an 8 x 10 enlargement will give a more satisfactory result. The larger the picture the less clear the detail. In making enlargements from films place them between two glasses; and if the film is smaller than the glass, cover the clear glass with a cut-out of black, needle paper.

The editor in making some enlargements recently found that her kodak brought the lens too near the negative and consequently the picture was too large. A pasteboard box a little larger than the camera was taken, a $3\frac{1}{2}$ x $4\frac{1}{2}$ opening cut in one end directly opposite the opening in the end of the camera, and on the outside of the box was made by means of passepartout strips and light pasteboard a frame into which could be slipped the negative. The other end of the box was taken off and the box made an extension of the camera box, which answered every purpose of an apparatus which was fitted to another camera and which cost $2.00. The pasteboard extension cost only a little time.

Necessity and a depleted pocket-book are the parents of invention.

ANSWERS TO CORRESPONDENTS

F. DEANE.— A solution which is equally good for hardening the films of negatives and the films of glossy paper is made of 180 gr. chrome alum; one-half ounce of powdered sulphite of soda, dissolved in four ounces of water. Add this to six ounces solution of hyposulphite of soda, and leave it in the bath ten minutes after the silver has dissolved from the film.

JEAN R.— From the appearance of the prints enclosed the fact that the fog on your negatives is in the same place on each print shows that your camera leaks light. The first thing will be to find the leak, the next to stop it, and you will have no further trouble with light-struck or fogged plates.

E. S. CARTER.— Why not try a box camera for your trip South? It is much more convenient than the folding camera, is ready on the instant, and the lens is always protected; whereas if you carry a folding camera and leave the camera open, dust and dirt get into it and injure the mechanism and also injure the lens. As you intend moving about from place to place, only stopping a day or two at a time, you are sure to find the box camera the most satisfactory of any.

H. N. S.— Brush-development means applying the developer locally with a brush, the printing-medium in this process being the platinum. The developer is always diluted with glycerine. First brush over the surface of the print with glycerine, and with a clean blotter take up all the superfluous moisture. Then have three dishes and three brushes, one dish to contain pure glycerine, the second two thirds glycerine and one third developer, and the other half developer and half glycerine. Have a separate brush for each dish, and be very careful not to dip the brush into any cup but its own. As soon as development in any part has gone far enough, brush it over with pure glycerine. One cannot in the space allotted for answering queries give very full directions, but if you will refer to recent numbers of the magazine you will find detailed descriptions of the process — a process which is most interesting.

FINE GRAIN NEGATIVES

NEGATIVES of exceptionally fine grain are desirable in photomicrographic work; and as the slower the plate the finer the grain of the emulsion, as a rule, therefore slow plates should be used. Finer grain can be obtained in the negative, as a rule, by adopting Lumières' plan of adding a solvent of silver bromide to the developer, and they specially recommend the addition of five per cent of ammonium chloride. This naturally acts to some extent as a restrainer, but certainly gives fine grain.

REMOVING RETOUCHING-MEDIUM

IT sometimes becomes desirable to remove the retouching-medium from a negative in order that it may be intensified or reduced. The procedure will, of course, depend somewhat upon the composition of the medium, but most of them now on the market, says *The Amateur Photographer*, London, may be removed by friction with cotton wool moistened liberally with benzole. Several applications with clean wool will be necessary to entirely remove the medium, and we should advise you to follow that treatment with an application of ether on cotton wool, followed in turn by methylated spirit on cotton wool. After that, you had better soak the negative in water, and see that it swells evenly all over, in which case you can proceed with intensification or reduction.

COPYING BY ARTIFICIAL LIGHT

IN this note it is assumed that the reader wishes to copy a map, plan, diagram, engraving or monochrome print. In that case little or nothing is likely to be gained by the use of ortho plates, beyond, perhaps, a little saving of time. The chief things in copying are (1) to get the lens opposite the centre of the copy, (2) to point its axis at right angles to the copy, (3) to use the largest stop that will give the required definition, and (4) to aim at illuminating the copy as evenly as possible. When artificial light is used it is advised to have two equal lights, i.e., one on each side of the camera, but so placed that no direct light from either can fall on the lens. Behind each light should be placed a semicircular reflector of white card or other similar material. If only one lamp can be used, then half the exposure must be given with the lamp on one side and the second half made when the lamp has been shifted over to the other side. Care must be taken not to disturb either the copy or camera when the light is moved. We shall get a double or blurred image. For copying, acetylene is excellent. Incandescent gas also is good, but not so rapid. Magnesium ribbon is also convenient, as two equal lengths can be used, one on each side of the camera.

N.B.— Should the copy be on rough-surface paper, each piece of burning magnesium should be moved round in a circle, so as to give as much variety in the direction of the incident light as possible.

PLATINOTYPE POINTERS

To each ounce of a cold saturated solution of potassium oxalate add two grains of copper chloride. This develops a warm black tone. Four grains of mercuric bichloride added to a cold saturated potassium oxalate solution gives a warm black tone.

For over-exposed prints from very strong contrast negatives, first pass the print rapidly through a dish of tepid water and *at once* transfer to a hot developer. This gives a greatly softened effect, but the high lights of the paper are usually somewhat grayed. This may be useful for certain atmospheric effects.

Floating the paper on the developer, face down of course, gives rather more brilliant prints than the usual method of immersing the print in the solution.

Rough papers, as a general rule, yield warmer tones than those got by the same treatment with smooth papers.

Flat, weak contrast negatives may be improved by printing under blue glass. Hard negatives should be printed under green glass, and very strong contrast negatives in sunlight under yellow glass.

Warm sepia colors are obtained by using an old sepia developing-bath and adding to it one part of a saturated solution of oxalic acid to ten parts of the old bath, and use at not less than 160° F. This developer will also give the best results obtainable with stale paper.

TONING PLATINUM PRINTS

PURPLE browns may be obtained on sepia papers by using the following developer:

Water	10 ounces
Potass. oxalate	1 ounce
Potass. phosphate	1 "
Citric acid	10 grains

Use at temperature 160°–180° F. By adding thirty grains mercury bichloride, sepia browns are obtainable.

Warm tones by cold development.— Stock solution: Twenty ounces water, five ounces citric acid, one ounce yellow mercuric oxide. Warm the mixture, shake well, and filter when cold. This is added in varying quantity to the normal cold developer, according as one requires a warm black or red brown color.

MELLOWING OR TINTING PLATINUM PRINTS

PLATINOTYPE prints may often be improved by slightly tinting the paper to a color approach-

ing that of a mellow old engraving; (*a*) a strong infusion of tea, or (*b*) coffee may be used; (*c*) dipping in a one per cent solution of potassium bichromate, rinsing lightly, drying, and exposing to light imparts a pale yellow-brown tinge to the paper.

Infusions of tea or coffee are better used freshly made, but may be kept for some time if a few grains of salicylic acid be added.

AGE OF PLATINUM PAPER

THE maturing of platinum paper, after first opening the original tube, has a considerable influence on the character or quality of the prints. They are softer in their contrasts, and less brilliant, and as the age of the paper increases, distinctly warmer in tone. Paper that has been kept two or three weeks should always be used for prints from very strong or harsh negatives wherever practicable. It possesses the additional advantage that it does not solarize so readily. It is assumed, of course, that the paper has been stored carefully in a calcium tube.

Prints not developed soon after exposure are similar in character to those on paper that has been kept. A greater effect of age is produced in a given time, however — probably on account of the unavoidable exposure to atmospheric influence during printing, inducing a change which continues more rapidly than the very slight effect of age in paper carefully stored.

STAINS FOR FRAMES

IN all cases the solutions may be diluted for light staining; and for the inexpert it is well to give several light stains, letting the work dry after each, as a single application of a strong stain is apt to result in patchiness. Have the wood dry and free from dust before staining. After staining it may be smoothed with very fine sandpaper, and varnished or polished if desired.

Black

(*a*) Protosulphate of iron (green vitriol)	1½	ounces
Water	20	fl. "
(*b*) Crushed nut galls	3	"
Water	20	fl. "

Let the galls simmer gently in the water for half an hour. When cold, strain. Bottle (*a*) and (*b*) separately. Apply alternately to the frame, with a sponge or brush, letting the wood dry after each application. Several applications are necessary, and on soft woods this gives the finest blacks.

Black
(for hard-wood frames)

Sulphuric acid (strong)	1 ounce
Water	16–20 ounces

Crude acid will answer. Wet the wood evenly, then dry before a clear fire. Repeat three or four times until black is intense, then wash away any free acid. An old sponge or cotton rag may be used, but will be destroyed by the acid, which must be kept from touching clothing, skin or carpets.

Brown and "Imitation Oak"

Permanganate of potassium and water. Strength according to color required; try ½ ounce in 20 ounces water.

Brown

Catechu (or cutch)	1 ounce
Water	10 ounces

In some cases it is necessary to boil, though some samples of catechu make solution without. May be used hot or cold. The color may be modified and strengthened by alternate applications of the above, and of bichromate of potassium in water; say ¼ ounce in 10 ounces. Stronger solution gives deeper color with a given number of applications.

Imitation Walnut

Bichromate of potassium	40 grains
Vandyke brown	400 "
Carbonate of soda	200 "
Water	10 fl. ounces

Boil. Apply hot or cold.

Red

Brazil wood chips	4 ounces
Alum	½ ounce
Water	20 fl. ounces

Simmer for half an hour in glass or an enamelled saucepan, then add 2 ounces acetic acid (glacial). When cold, strain and bottle.

Madder Red

Alizarine paste (10%)	400 grains
Ammonia. 880	½ ounce
Water to	3 fl. ounces

Shake well, and see that solution is complete, then add:

Alum	10 grains
Water	½ ounce

If kept long, must be well corked to prevent evaporation of the ammonia.

Green

(*a*) Acetate of copper	2	ounces
Cream of tartar	½	ounce
Glacial acetic acid	½	fl. ounce
Water	20	fl. ounces

Dissolve slowly and almost completely, with frequent shaking.

May be modified by mixing with a solution of —

(*b*) Indigo	2	drams
Glacial acetic acid	½	fl. ounce
Water	20	ounces

Boil. Add one part of (*b*) to about four parts of (*a*). More of (*b*) gives darker color. — *The Photographic Monthly.*

NOTES AND NEWS

OUR SPECIAL PORTRAIT COMPETITION

THE portrait competition, open to professional workers only, closed September 1 of last year, at which time, however, relatively few entries had been received. This we attributed to the photographers' conventions, State and National, which had exhausted the best productions of the artist members of the fraternity, who solicited us for more time. This was granted, and December 1, 1906, was fixed for the time limit, the change proving mutually satisfactory. The portraits received were submitted to the jury, and the firm of Brock & Koonce, of Asheville, N. C., emerged as the successful winner. The prize, as advertised, consists of a Cooper-Hewitt Printing-Outfit, cash value $130.00, which, Mr. Brock informed us, came most opportunely, as his firm was going to occupy a new and more commodious studio in January, and this new equipment will enable the firm to facilitate the work in the printing-department. The printing-outfit was forwarded to the prize-winner directly from the Cooper-Hewitt headquarters in New York City.

Mr. Brock, who is the artist of the firm, while Mr. Koonce attends to the business end, has gained both fame and fortune through his strikingly artistic work, and it is, therefore, not surprising that the prize has been awarded to his firm. We expect to publish the successful print in the February issue of the PHOTO-ERA. The subject represents a young lady seated, thoughtfully, at a window, through which is visible a charming summer landscape. The work is slightly in the direction of the new school of portraiture — well-modelled, and soft in texture, yet vigorous and full of character. The management of pose and lighting evinces the master hand.

MR. CORTHELL'S EXHIBITION

WENDELL G. CORTHELL, of Wollaston, Mass., exhibited an interesting series of prints at the Boston Camera Club last month. His outdoor pictures, which are taken mostly during his travels in Europe, evince a decided artistic temperament and considerable taste in the selection of material. Our readers are familiar with Mr. Corthell's work, choice examples of which have appeared in the PHOTO-ERA from time to time. In the December issue of 1905 we printed his admirable sketch on Dinan, together with a charming set of prints illustrating the picturesque features of that old Brittany town. Mr. Corthell excels in the introduction of the human interest into the picture. His artistic experience enables him to select the right moment, and thus the figure or group of persons becomes an harmonious and inseparable part of his picture, be it a landscape or an architectural subject. He also fully understands when the human element mars rather than helps the picture; thus he prefers to depict certain scenes as lonely and deserted, which certainly heightens the artistic effect. Among the most attractive subjects shown at the Boston Camera Club were "Shoemaker at Amalfi," "Gateway to Peterborough Cathedral," "Canal, Venice," "Castle of Chillon," "Lake Como," also several old stairways in southern Italy. He displayed also a number of charming genre subjects and an interesting series of portrait-studies.

PHOTOGRAPHY BY WIRE

THE European side of the photographic world has lately been stirred, as rarely before, by the discoveries in the matter of transfering photographs by telegraphy. Our readers are doubtless familiar, by this time, with the details of this wonderful phase of electro-photography, as details have been printed in every prominent newspaper throughout the world. The man originally identified with this invention is Professor Korn, whose process of transmitting the photograph along the telegraph-line consists in using the negative or the positive film as the object, whose image is received on the selenium cell. At the end of the line is fixed a Geissler or vacuum tube, and the illumination in this, excited by some electrical source, varies with the strength of that source, therefore in this case with the intensity of the current through the line, which is altered by the variation in the density of the silver image. The light from the Geissler tube acts on a sensitized emulsion, which by development gives a reproduction of the original photograph.

M. Edouard Belin appears to proceed in a different manner. Here the camera is placed opposite the subject to be transmitted, the image being received on some surface which is connected with the telegraph-line, at the other end of which is a blank sheet of paper on which the image is recorded at once. There is no intermediate negative or positive. His first experiment was sending an image of a black dot along three hundred miles of wire. He has continued his experiments along this line, hoping to be able to thus transmit the image of a human face or any other object. It is reported that he is about to realize the feat of sending ten successive images per second, so that an object or scene photographed at one place will be instantly transmitted and received at another.

Just what means are employed by each of these two bright minds is not yet clear; but it is known that Professor Korn's results are in line, whereas M. Belin's are in dots. It appears to be generally conceded that the Frenchman's methods are a great improvement over those of Professor Korn. Every one interested in photography will watch with profound interest the progress of this marvelous invention. Stay-at-homes need not rest content by merely listening to the musical strains of an operatic performance. They may hope to also observe the action of the performers upon

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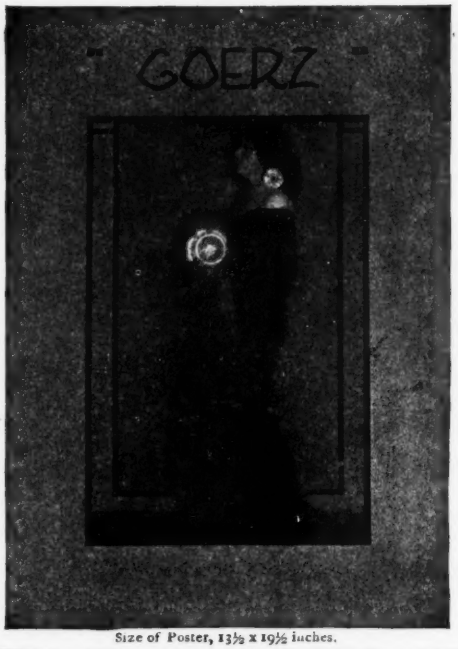

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The GOERZ Catalogue for 1907

THIS splendid General Catalogue with its magnificent Prize Cover, a reproduction in two colors and gold, from Ed. I. Steichen's original gum print winner of the Goerz Catalogue Cover Competitions, (1905) will be sent on request against remittance of 9 cents in stamps to cover postage.

¶ The Catalogue gives full particulars on all Lenses, Cameras, Binoculars and other goods manufactured by this Company. It comprises 64 pages of text, profusely illustrated, a collection of valuable lens formulae and short cuts, one beautiful photogravure (a reproduction of one of Radcliffe Dugmore's celebrated animal pictures) and fifteen fine half-tone reproductions "hors texte."

¶ In answer to numerous requests from artists and art lovers, the C. P. Goerz American Optical Co. have decided to publish a limited issue of 250 reproductions from Mr. Steichen's Prize-Winning Catalogue Cover Design. They are in the form of a poster and are reproduced in fac-simile as to size and color directly from the original. They are all printed in two colors and gold, on extra heavy paper and are ready for framing. They will be mailed carefully packed, and registered against order accompanied by remittance, (check on N. Y. or money order.) Price, $1.50 net.

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the stage at the same time — all by means of a combination of electricity and photography, for which method scientists are searching for a name. For the present it may suffice to call it "Photography by Wire."

EDITORIAL NOTICE

AMONG the mountain-views which embellish the pages of this issue of the PHOTO-ERA are three the authorship of which we are unable to establish. They are, "Les Aiguilles de Mont Blanc," "Matterhorn and Mountain-Sheep" and "Swiss Landscape." The original prints were kindly loaned us for the purpose of reproduction by C. E. Cobb & Co., of Boston.

A PHOTOGRAPHER-STATESMAN.

IT is not often that a professional photographer is disposed to render a public service to his State. A well-known photographer of Attleboro, Mass., is a member of the General Court of Massachusetts, and has lately come into political prominence by his bill in favor of biennial gubernatorial elections in his State. Although personally knowing Mr. Holman through his talents as a photographer and as a public speaker, we do not know whether he is Republican or Democrat; but in his desire to have a governor of this State elected only once in every two years he has the sympathy of the majority of the voters in the Bay State. Those who have had opportunities to enjoy Mr. Holman's oratorical powers may rest assured that when he raises his ponderous voice in the House of Representatives everybody will listen with profound attention. We predict success for the bill which Mr. Holman will introduce.

A GENEROUS INVITATION

THE genial Elbert Hubbard is very fond of a joke. We have before us a most hearty and cordial invitation to attend one of his lectures. The request for our presence comes in the shape of a private mailing-card. The left side is adorned with a superb likeness of this well-known lecturer and philosopher, and to the right appears the following legend, in very large type:

"From the Roycroft Shop, which is in East Aurora, Erie County, N. Y., U. S. A.

"You are cordially invited to attend the lecture by Elbert Hubbard at the First Parish Church, West Roxbury, Mass., Saturday evening, January Twelfth, Eight o'clock, auspices of 'The Unity Club.' Subject: 'An Age of Common Sense.'"

We were just considering the train service, our engagements, etc., being deeply moved by this hearty invitation to attend this lecture by the illustrious American, when our attention was called to a short line, printed in exceedingly small type, at the bottom of the post-card. This read, "Admission seventy-five cents."

LANTERN-SLIDES IN COLOR

THOSE indefatigable workers MM. Lumiere have been perfecting a new color process for making lantern-slides, which, although extremely simple of manipulation, has been enthusiastically admired and approved by all who have had the pleasure of seeing specimens of the work. As the color values are true to nature and the operation of making simple — all of the colors being faithfully reproduced in one exposure on one plate, and development being the same as all other plates — the process will have a big future. When developed, the negative is reversed, developed again in white light, fixed, washed and dried; after which the image may be seen in all its beautiful colors.

THE PHOTOGRAPHERS' ART LEAGUE

THE Photographers' Art League held a very instructive and successful session November 13 and 14. The following officers were elected: C. A. Shubart, president; F. C. Benton, secretary and treasurer. The next meeting will be held at the studio of I. E. Townsley, Vincennes, Ind., about March, 1907.

THE PHOTO-SECESSION EXHIBITION

THE first of the season's exhibits of work by members of the Photo-Secession, which was held during the past month at the Little Galleries, between Thirtieth and Thirty-first Streets, New York City, offered an exceedingly interesting and noteworthy collection of work, most of it new. The place of honor was given to five prints by Steichen in as many different printing-processes, which, in addition to their artistic merit, furnish suggestive and striking examples of the possibilities of platinotype, bromide, gum-bichromate, platinum and gum-bichromate combined and photogravure.

The work of Mrs. Käsebier, Miss Alice Boughton, Miss Lohman, Mrs. Bennett, Miss Adelaide Hanscom, Herbert G. French, Joseph T. Keiley and other well-known Secessionists also occupied positions on the walls.

Clarence H. White was represented by a number of excellent examples of home protraiture, showing marked progress and much promise for the future, while Alvin Langdon Coburn exhibited a carefully selected collection of his characteristic work, including his portraits of George Bernard Shaw and Frederick H. Evans.

As a whole, the exhibition should be highly satisfactory to its promoters, as it evidences sure and steady progress toward the high ideal of Mr. Stieglitz and his followers, who have done much for the improvement of pictorial photography in America.

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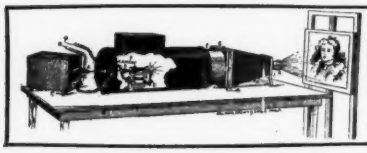

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SIX TO ONE.

THE OPINION OF AN EXPERT.

The popularity of the Kodak system of picture making is ever on the increase among advanced amateurs, as their experience has taught them to appreciate its value for both convenience and results. We print herewith a letter from Mr. Richard Hines, Jr., Sunday editor of the *Mobile Register*, and a well-known writer on photographic subjects:

"EASTMAN KODAK COMPANY,
Rochester, N. Y.

Gentlemen:

I am sending you, by this mail, an article written by me for the photographic department which I conduct in this paper, appearing in the *Sunday Register* of October 21. I also enclose a print from one of the negatives made by your tank method and alluded to in that article. The enclosed print is on Special Velvet Velox and to my mind is from undoubtedly the finest negative which I have ever made in my amateur experience of ten years—barring perhaps a few flower negatives I have in my possession.

This print shows a colonial house in Greensboro, N. C., and the exposure was made with your popular 3A F. P. K. The exposure was at 11 A. M., on a cloudy bright day, $\frac{1}{25}$ of a second with stop U. S. 4. The development was in one of your tanks for twenty minutes with your pyro powders as a developer.

I would like to have an opinion on this from your expert. For myself I have been amazed at the excellence shown in this print by the lens on the little camera. Not only can the detail in the capitals of the columns be seen with the naked eye, but the flutes in the columns as well. I must admit that the house was beautifully lighted for photographic purposes with a soft, diffused light, illuminating the shadows, but even then I feel that this is a remarkable evidence of the value of your 3A lens and your tank developing method. To me the work is more remarkable, because I am not an expert with a hand camera, the great majority of my work having been done with a stand camera. This is the first hand camera work I have done for perhaps eight or nine years.

Yours truly,

(Signed) RICHARD HINES, JR.,
Sunday Editor."

The following is an extract from the article in the *Mobile Register* above referred to:

"Though the factorial system offers a great improvement over the old method of development, yet it offers no emancipation from the disadvantages of the dark-room. Lately the writer has had an opportunity to put to the test in a very thorough manner the system of tank development for films, having developed in that manner within the past two weeks some sixty films exposed during a three weeks' vacation. The exposures ranged from 1-25th of a second with the U. S. 4 to several seconds with the same diaphragm, including snap shots in the sun and portraiture indoors. Not a single exposure failed to make a negative. In the number there were several of the most beautiful negatives it has ever been the fortune of the writer to make. While the resulting negatives were of varying densities—some from under-exposure, being very weak and others from over exposure, being very dense, not one of them failed to make a print. This test has satisfied the writer to the extent that he can and does give his unqualified endorsement to the system of tank development. The beginner as well as the advanced amateur will find in this method the one best suited to the securing of the greatest number of good negatives from any given number of exposures. The films dry up clean and brilliant and generally free from any of the usual defects caused by the handling necessary to separate development under the old system.

"The opinion is ventured that the amateur who uses a tank, keeps a record of his exposures and then studies the resulting negatives in the light of his records *will learn more in a month about suiting his exposures to his developing methods and thus securing good negatives than he would*

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ROCHESTER, N. Y., *The Kodak City.*

in six months under the old haphazard method that so many amateurs are content to practice.

"There has been much written in the various photographic magazines during the past six or eight months on this subject, some taking positions adverse to the advantage claimed for the tank method, but the preponderance of evidence from men of accredited reputation in the photographic ranks has been in favor of the tank method, which is but an adaptation of the factorial system as originally outlined by Watkins. Moral: Get a tank."

SOLID INFORMATION.

Over seventy thousand amateurs have absorbed the good, practical information contained in *The Modern Way in Picture Making* rendering it necessary for us to publish a new and revised edition. In this book, it is assumed that the reader is more or less familiar with photographic theory, and its pages are devoted to articles on how to *do* things, accomplish *results* and written by such experts as Stieglitz, Eickemeyer, Demachy, Dugmore, Steadman and Ritch.

Every branch of the art is covered, including Out Door Work, Street Scenes, Landscape, Pictorial Photography, Flashlight and Portraiture.

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Absolute contact without curl even on the thinnest mounts, and the quick method of application by heat has made a multitude of friends for Kodak Dry Mounting Tissue, but there is still another friend-making feature of the tissue that is not so readily discerned. Kodak Dry Mounting Tissue, being dry and not subject to atmospheric changes, requires no chemical in its make up to act as a preservative, and consequently when holding print and mount in contact, there can be no chemical action that would result in the ultimate discoloration of the print.

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ART IN KODAKERY.

Boston Transcript.

Never has the siren song of kodake *y* been sung with such artfulness as by Dr. Dixon, aided by the exhibition of enlargements which forms his chorus. It is the very poetry and romance of advertising, this Kodak show; and if the effectiveness of advertising is in proportion to the concealment of the purpose, on the principle of art concealing art, the Eastman Kodak Company has attained to the zenith. The exhibition is most interesting, in a variety of ways, and there is no little art in it. It has scientific interest. and touches the observer at many other points, as in history, architecture, landscape, child-life, sport, travel, adventure and discovery. Not every owner of a Kodak is an artist, since something more than the ability to press the button is required. Yet it did not need this exhibition to prove that there is ample opportunity for the photographer to demonstrate his or her taste, knowledge, individuality and imagination. Setting aside all comparisons with other pictorial processes, we still adhere to our conviction that, photography in the hands of an artistic person, is one of the sisterhood of arts, and is capable of expressing subjective as well as objective thought and feeling. in spite of all the limitations of its mechanical phases and methods.

Some of the pictures which help to confirm this view may be singled out from the large collection in Copley Hall. There is Edouard Steichen's "Lady and Child" (14), two figures in an outdoor light, a prize work, and the "Interior, Contre Jour" (125), by Mme. Albert Huguet, in which a single figure is seen relieved against the light from a French window. These figure pieces show what can be done with rather simple figure subjects. They have pictorial merits of a high order. They do not attempt to tell much of a story; they are not illustrative; and they are not dramatic. It has been a common fault of figure pieces in photography that they have tried to do too much; we have a poor opinion of the anecdotic photography; the machinery of it is always too visible.

The group of pictures by J. Craig Annan, hung on screen No. 31, includes some admirable things, as for example, "The Team" and "Sunshine and Shadow." Atmosphere is given in these pictures by the softening of outlines; yet they would be good designs, and perhaps just as satisfactory as pictures if the definition were sharper.

The camera ought to be used with judgment. Sometimes it sees too much, sometimes not enough. It all depends upon the man behind the gun.

THAT CHRISTMAS KODAK.

Our order for Kodaks from St. Nicholas was a pretty heavy one. A good many went to Brownie graduates, some to former users of "eight by tens", but the great majority to novices who are now just starting along the Kodak way. Our interest in the Kodak and its user does not cease when the Kodak leaves our factory; we know that every Kodak can take good pictures and we want every Kodaker to obtain the very best of results.

We have made Kodak picture making daylight all the way, but there are certain little difficulties that will crop up for the inexperienced, and for this reason we have a staff of trained and skillful teachers at the service of every Kodaker. The Kodak Correspondence College cannot help but benefit every amateur photographer, as it treats of both the technical and artistic side of photography. Each pupil is given individual attention and the course does *not* consist in filling out arbitrary form letters.

The Kodak Correspondence College is open to all upon the payment of two dollars, which price simply covers the cost of the text-book and a portion of the postage and stationery. This charge is indeed merely nominal and we depend for our gain upon the increased interest in photography among the pupils and their friends. We pay the postage in returning films and unmounted prints. Pupils are expected to pay the charges *both ways* on glass plates.

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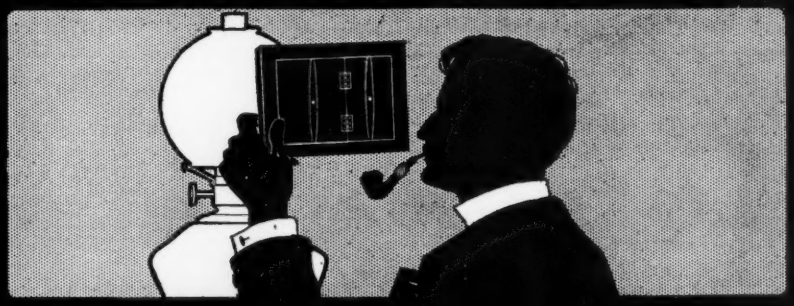

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